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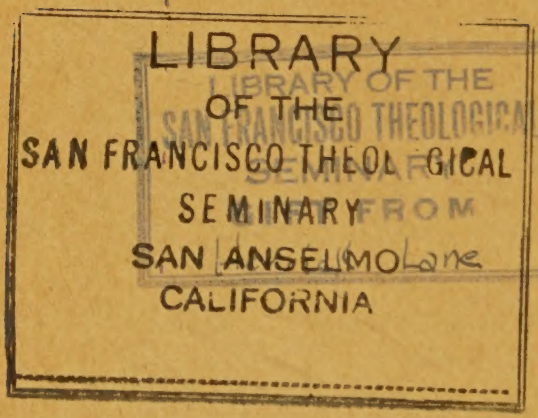

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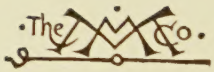
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THE PHILOSOPHY OF EDUCATION

BEING

THE FOUNDATIONS OF EDUCATION IN THE RELATED NATURAL AND MENTAL SCIENCES

BY

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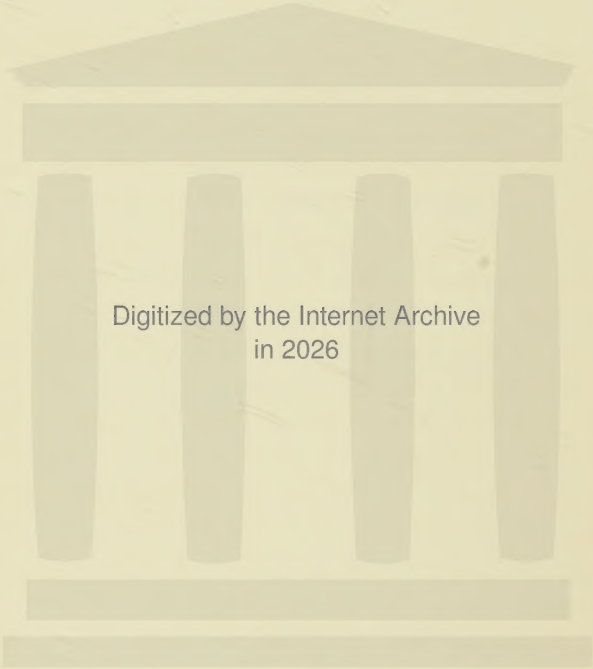

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PREFACE

"WHAT, then, is education, and how are we to educate? As yet there is no agreement on these points. Men are not agreed as to what the young should learn, with a view either to perfect training or the best life. It is not agreed whether education is to aim at the development of the intellect or of the moral character. Nor is it clear whether, in order to bring about these results, we are to train in what leads to virtue, in what is useful for ordinary life, or in abstract science."

These are modern words from Aristotle. They indicate for us the Babel of voices in the educational world. The times call not for another voice, louder than the others, but, if it can be had, for a quiet vision of the compelling truth. I have simply attempted in the following pages to help remove the veil from the face of educational truth, in the light of which, perhaps, some confused teacher may find the way to his appointed task. I have no war to wage, not even a battle to fight, wherewith to feast the eye of workers hungry for the bread of educational life. My purpose has rather been to do the more serviceable, if less spectacular, thing of passing

on to willing ears the word of the still, small voice as it has vouchsafed to speak to me, listening, as I watched the educational combats. The artificial manufacture of educational systems is noisy in our day; the natural growth of the educated life is always noiseless.

My word to the warring sects is peace through unity. I have attempted to organize the contemporary conflicting claims in a system of mutual dependence, giving value where value belongs. The educational truth to-day is in the unification of those educational truths for which the separate factions are fighting. If claims can be rightly adjusted, harmony should ensue for a season, until, indeed, the educational life develops new contradictions to be synthesized. I cannot hope to have presented a satisfactory organization of these opposing tendencies, but only to have suggested where the contemporary educational problem lies, and, perhaps, some of the elements of its solution. The present problem of education, really one of organization, is too often and too easily solved by an over-simplification of its elements; whereas a process so complex and even confused in detail as education is, can be truly simplified only by synthesis. The truth is in the whole, not in the part.

With this message in mind, I have written for those choice spirits everywhere among teachers (may their tribe increase!) who love to pass at times out

of the arena of educational combat into the field of labor where the flowers grow by the wayside, and who love also to rise at times out of the working valley of humble detail on to the mountain-top of exalted vision; and I have not been forgetful either of those careful students of education, whether laymen or expert, who are always looking for underlying principles. Enough theory will be found here, I trust, to illumine practice, and only so much; enough practice, too, to give weight to theory. Some readers may find, I fear, as Kant said, that my book would have been shorter if it had not been so short, for I have attempted to pack paragraphs with thought, and not to pad pages with paragraphs.

The book itself is the result of a course of lectures first given in the Dartmouth Summer School, 1900; later to my students in the Graduate Department of Pedagogy in Dartmouth College; also in the Summer School of the University of North Carolina, 1903; and, finally, in the Harvard Summer School of Theology, 1903. The cordial hearing given these lectures, which I here gratefully acknowledge, leads me to hope that the book as now in part rewritten and extended will still prove of service both to old and new friends. To prevent disappointment, let it be plainly said here in advance to the busy and practical superintendent and teacher (though, perhaps, *pace tuâ*, you most of all need its message), the volume is not another manual of practice, but an interpretation;

it would give not rules, but insight. The work of the teacher, too often a temporary drudgery to the woman until marriage, and to the man until a more remunerative proffer in other employments, and too often to their fellows a belittling occupation, will become ennobled in the eyes of all only as we become conscious of the foundational place education occupies in our world.

As to personal confessions and indulgences craved, I beg to say that upon the fields of biology and physiology in Chapters II and III I am a trespasser, entering here, as I do, not at all as a natural scientist, but as one who in the study of mind and its meaning comes upon its physical foundations. I hope for a welcome here by my fellow-workers beyond my hedge in the interest of inter-departmental courtesy, even as I am grateful for having entered into their labors.

My psychology is the kind familiar since Kant, that considers the unity of mind in its threefold diversity of knowing, feeling, and willing, though for some reasons it is now time to reconsider the ultimate phases of consciousness with a view to a new classification. Such a new classification appears in Professor Royce's recent "Outlines of Psychology." In Chapters VI and VII of my discussion the psychological results are from the rational, genetic, and social points of view combined.

The philosophical system of the book, which I

have termed Idealistic Theism, appears in the final chapter as the necessary implication of the educational process. It is also the presupposition of the whole discussion. The book is an application of this philosophy to perhaps the most important matter of human life, viz., the education of men and women. As Macaulay has observed, "The first business of a state is the education of its citizens." To this philosophical system itself, both in its purer exposition and in its fuller justification, I hope to return with the years as they bring the more philosophic mind. In reaching this insight for myself, my indebtedness is greatest to America's leading metaphysician, Professor Josiah Royce.

My method of presentation, as those will recognize who know the book, or its author's method of lecturing, is derived, however faulty the imitation, from the "Science of Thought" of the lamented Dr. Everett, — a book too little known by those writers and speakers who want to be logical.

My own contribution to the definition of the conception of education will doubtless appear in a certain large and systematic unity, herein introduced into the hitherto rather unshapen notion of what education is and means in human experience; in the analysis of the spiritual environment of the pupil, together with the attempt to vindicate on sociological and psychological grounds the equal right of æsthetic, with physical, intellectual, and moral education, as

contained in Chapters IV and V; and in the induction of the Kantian ideas of God, Freedom, and Immortality from educational, rather than ethical, facts, as presented in the final chapter. For these things I thank not myself, nor my stars, but my own teachers, both the quick and the dead, who have made them possible.

To the educational masters, from Socrates to Eliot, my indebtedness appears on every page, but, rather than cumber the pages with many foot-notes, and at the same time to make the bibliographies most helpful, I have gathered the references together at the end of each discussion.

My hearty thanks are hereby rendered my colleague, Mr. F. C. Lewis, for assisting me with the proofs and giving many valuable suggestions and references.

HANOVER, NEW HAMPSHIRE,
September 2, 1903.

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THE PHILOSOPHY OF EDUCATION

CHAPTER I

INTRODUCTION: THE FIELD OF EDUCATION

1. The Agencies of Civilization.

THERE are five great agencies of civilization which conserve the past, preserve the present, and make possible a progressive future. These agencies are the home, the school, the vocation, the state, and the church. The home is the basic unit of civilization, in which appear in latent form all the powers that later life is to realize. The school was first in the home, and by growth became a separate institution as an extension of the home. The teacher is still said to stand *in loco parentis*. The vocation is made possible through the enlargement of personal power that takes place in the home and the school. The plying of one's vocation safely and justly necessitates the state. And underneath this whole procession of institutions, giving immortal significance to each and all, is the church. Thus the agencies of civilization are organically related.

Each of these agencies, too, discovers the social nature of man, revealing him as they do in a series of widening relationships with other beings. In the home the child stands in relation to father, mother,

brothers, and sisters. In the school the youth stands in relation to teachers and fellow-pupils. In his vocation man stands in relation to fellow-laborers. In the state man stands in relation to his fellow-citizens under the law. And in the church man stands in relation to the ideal Person, to God, — the widest relationship possible to man.

Each of these institutions of society is based upon an underlying idea which explains their service to civilization, and which justifies their existence. In the home it is the idea of obedience which is fundamental, and which becomes the habit of the child's life. This habit of the ready surrender of self to the standards of a righteous and loving authority is permanently desirable in a solid social fabric. To obey is better than sacrifice. This fundamental virtue is the contribution of the home to society and civilization.

The underlying idea of the school, which explains the school and justifies its existence, is development; development of the body as the fit medium of expression for the mind, development of the mind as the fit governor of the body and as embodying rational ends in itself. The school does for the child what the æons of past time have done for the race, — develops its body and mind.

The underlying idea of the business world, in which each man follows his vocation and justifies his existence by the sweat of his brow, is the interdependence of the sons of earth. No civilized man produces all he needs in order to live, nor consumes all of what he himself produces. The members of the business world, as they follow their vocations, daily enter into

each other's labors. Each man is both a producer and consumer, producing one thing that is necessary for many lives, and exchanging it for many things necessary for his own life. The world of one's vocation emphasizes the unity, the solidarity, the interdependence, of man and man.

The underlying idea of the state is justice, *suum cuique*, to each man his own, the return of the deed on the doer, whether it be protection for his conformity to the law or punishment for his violation of the law. The state is the impartial judge, rewarding every man according to his deed. Justice is the foundation of the structure of human society. The "Republic" of Plato is the first great discussion, and one of the final great discussions, of the ideal state. Already it was recognized that the theme of justice, which is one of the titles of the dialogue, is in all its ramifications the theme of the state. To the modern Platonist, Hegel, the state is also, in the political organization of society, the final revelation of the eternal Idea. It is in the ministrations of the state that man becomes uniquely conscious of that which is just.

And the underlying idea of the church, in which man comes into his widest consciousness through relationship to God, is righteousness, the doing of the will of the supreme Person upon the earth, the transformation of the kingdoms of earth into the kingdom of heaven, the addition of love and mercy to law and justice. The church is the perpetual prophet of the ideal to human society, winning the attention of men away from the things that are to the things that

ought to be. In the church society becomes most profoundly conscious of its inherent unrealized powers of righteous attainment, and man of his infinitude.

2. The Mottoes of Growth.

It is the natural destiny of every man to receive successively these continually widening views of his nature. Man comes into the fulness of his growth and into the final consciousness of himself through these elements of his social environment. Only by subjecting himself to them and learning their lessons and habituating his conduct to their ideas can he rise through them to the full measure of his own self-consciousness. The mottoes of spiritual growth are three. In childhood, in the institution of the home, the child must be another, imitate others, obey others. He can become himself only by first subjecting himself, all unconsciously or with effort, to others. In the school, which compasses the adolescent period, the youth must be himself, develop his powers, become all his nature permits, and gain the sense of his individuality and independence as a man. And in the business, state, and church worlds, during the period of manhood, he must find himself in the service of others, must make himself a contributor to the life of society, and must find his self by losing it. First obey, then become, then contribute — these are the natural stages of self-realization as indicated by the social institutions.

It is a familiar thought to-day that the physical organs of man, to be understood, must be viewed against the background of lower animal life. It is a less familiar thought, but equally true, that the activities of man as expressed in the social agencies of

civilization must likewise be viewed against this background of lower animal life. The home, the school, the vocation, the state, and the church are due to traits in man which are found also in simpler form in the lower animals. They mate, build homes, teach their young by example, form social communities, have leaders of flocks and herds, and become attached to higher beings who are good to them and upon whom they depend. The unique thing about man is not his uniqueness, but his comprehensiveness. In him the lower animal life finds its fulfilment. Through his highly developed powers of abstraction, imagination, and reason, only intimations of which the lower animals possess, man is enabled to carry on to greater fruition the immanent ends of existence. Through these institutions, taking up and adding to his animal heritage, man grows, and finds himself like a noble oak, which, in subjection to natural law, grows into its own likeness, and then both shelters and delights the sons of men. Only in the man these stages of growth are conscious as he subjects himself in obedience, as he finds himself in development, and as he gives himself in service.

3. Broad and Narrow Conceptions of Education.

This review of those natural social influences that come upon and shape the life of man lead to two resulting conceptions of education, a broad and a narrow one. Broadly speaking, the whole of life is an education, and life itself, in all its phases, is the great school. Not a situation in life but leaves its influence on the individual. Every agency of civilization is an education. From this point of view education becomes the resultant upon the individual of the sum total of

the influences of life. Every human situation is an educational situation, in which we grow from less to more. The significance of past time, so far as organic life is concerned, is found in the present stage of development and attainment of mankind. The meaning of the manifold present will be spelt in that larger future situation to which the present is but the antechamber. The human race itself as a whole is being educated under the tutelage of the Infinite Spirit, both in nature and in man, for a destiny greater, both in time and eternity, than it can imagine. This is the broadest conception it is possible to hold concerning education, in which living is itself learning, and life is itself the school, and the Spirit of the world himself the teacher.

But, narrowly, education is the influence exerted by the school, technically so called, upon the individual. The school is the institution which appoints to itself the task of developing into fulness of self-consciousness and power the members of the race. The other institutions of society educate incidentally in the natural performance of their functions: the school educates with set purpose; it intends to do what it can to put the plastic element in society, its youth, into full possession of itself and into full consciousness of its social relations and duties. The school, in this sense, embraces the whole educational system as a unit, from kindergarten, through primary and secondary grades, college, university, and professional schools. These all work together as one for the making of a man both powerful and efficient, and the educational house should not be divided against itself.

4. Points of View in the Study of Education.

The study of education may be undertaken from either the broad point of view, as above defined, or the narrow. From the former point of view the study of education is the study of civilization in its entirety. With this aspect of the subject the present inquiry will have nothing further to do, confining itself rather to the nature of the education which it is the function of the school to give. But even this field for our present purpose will have to be narrowed further.

There are four points of view from which the study of education, in the narrow sense of the term, may be profitably undertaken. Education has a history, an ideal, a practice, and a philosophy. The educational ideal, as defined by the normative science of education, is an outgrowth of educational history. Educational practice is the attempt to incorporate the educational ideal. And the philosophy of education is the attempt to find the meaning of the whole educational process as it takes shape in history, ideals, and practice. Thus the philosophy of education would give the inclusive truth which the preceding points of view indicate. Let us briefly define each of these four points of view, viz., the history, the science, the practice, and the philosophy of education.

(1) The History of Education.

The historical point of view asks the question, What has education been in the past? The answer is given from the standpoint of the history of civilization, education being both an effect and a cause of a nation's manner of life. The answer considers both those educational systems that have controlled a nation's life, being also controlled by it, and those

educational reformers, who, like Goldsmith's village preacher —

> ". . . tried each art, reproved each dull delay,
> Allured to brighter worlds, and led the way."

The historical consideration of education begins with the Orient and treats of the educational systems and ideals of the ancient nations, China, India, Persia, Israel, Phœnicia, and Egypt; then the classical nations of Greece and Italy; then the early church and Middle Age education, followed by modern education, since the Renascence; and finally, the contemporary educational systems of the leading countries of the world. Such an historical study discloses education as a growing body of theory and practice, as a process of evolution in the system of instruction become conscious of itself. The origin and growth of the body under the laws of nature was a process of unconscious evolution; the development of the body and mind under the nurturing influence of the school is a process of conscious evolution. As a resultant of historic forces the educational ideal is defined.

(2) The Science of Education.

Second, the scientific point of view in the treatment of education is the attempt to say what education ought to be, to define the educational ideal, to reduce the art of education to a science. In the well-known phrase of Professor Jevons, an art teaches us to do, and a science to know. The teacher, or educator, is doing something; the pupil, as he becomes educated, is doing something. Education is doing; it is an art. But is this art conscious of its basis?

Are there universally valid principles which underlie this art, as anatomy and physiology underlie the practice of medicine? The science of education attempts to answer these questions, to discover the theoretic basis upon which the art of education rests.

The questions of the science of education are two, namely, What is the nature of the body and mind to be educated? And how, in the light of their nature, ought this education to proceed? The answer to the first question the science of education seeks in the sciences of physiology, psychology, logic, æsthetics, ethics, and sociology. Physiology reveals the nature of the body. Psychology reveals the nature of the mind when analyzed into its elements, and explained through its physiological relations with the body and brain. Logic is the science of the knowing function of the mind, as æsthetics is the science of the feeling function, and ethics is the science of the willing function. Sociology is the science of man in organized groups. These are the sciences that underlie the art of education.

The answer to the second question of the science of education, namely, how, in the light of their nature, ought the body and mind to be educated, is now in process of making. It is the new question in educational history that originated with Herbart. It is the question of method, or the right way of doing a thing. It is being answered in tentative fashion, for the making of a man is no simple matter, by the physical culturists, the applied psychologists, like James and Dewey, the normal schools, the summer schools for teachers, and the pedagogical departments of the

colleges and universities, together with the growing and for the most part undigested literature on the methods of teaching.

The question of the right way of teaching needs to be dignified in the sight of our most capable and prominent educators. In his inaugural address in 1869, reviewing the increase in knowledge of the modern centuries, President Eliot was led to say, "The actual problem to be solved is not what to teach, but how to teach." Likewise there is no fallacy of *argumentum ad verecundiam* in quoting from Talleyrand, "*Les méthodes sont les maîtres des maîtres.*" The study of method in teaching is but the study of the best way of doing what must be done in some way. And Dr. Arnold of Rugby has well reminded us, "It is clear that in whatever it is our duty to act, those matters also it is our duty to study." The use of method in teaching is seeing that the subject-matter taught is realized in the experience of the pupil. Without this result, teaching and learning are mechanical; with it, they are vital. But those who set about determining the method of education today must look, not as they are tempted, to psychology alone, but to that group of related sciences defined above, one of which is psychology, and which together define the physical, mental, and social nature of the being to be educated. Education is primarily an art; it can become a science only as it grounds itself upon universal principles, applicable to all individuals alike, deduced from the sciences of man, the educable being.

In the third place, education in the narrow sense

of the term may be studied from the practical point of view, viz., from that point of view which considers the practice of education, the execution of the ideal of education, as defined by history and science, through the agencies of school boards, superintendents, parents, teachers, and pupils, working together with books and apparatus in buildings and fields. This point of view has to do with the mechanical and the vital environment of the educational process, with the conditions in relation to which education becomes an accomplished fact. The problems of the practical point of view are three, viz., (1) how to organize a school or school system; (2) how to manage, in which the question of discipline is uppermost; and (3) how to supervise. Under the practice of education are involved all questions of school hygiene, incentives, work, play, offence, discipline, punishment, and the improvement of teachers. In no particular has American education been weaker than in these practical matters, and no educational sign to-day carries more hope with it than the widely growing recognition of their importance.

(3) The Practice of Education.

Finally, in the fourth place, after the history, the science, and the practice of education, one raises the fundamental inquiry as to the meaning of the whole educational process. Does this education, which occupies so large a proportion of the human history that is worth remembering and repeating, whose ideal it is so difficult to define, whose practice engages the best service of the best minds of civilized society, and consumes annually incredible amounts of public money, — does this education mean any-

(4) The Philosophy of Education.

thing significant for human happiness, progress, and destiny? What? Does education imply anything as to the final truth of man and his world? In brief, what is the meaning of education? That is the question which it is the function of the philosophy of education to answer. That answer must give unity to the truths of the preceding points of view. It must locate education in the economy of our universe.

The masterpiece in the literature of this aspect of the subject of education has been, since its publication in 1848, Rosenkranz' "Philosophy of Education," written in the spirit of Hegel. The problems of the philosophy of education are divided by Rosenkranz into three, viz., (1) Education in its General Idea; (2) Education in its Special Elements, including physical, intellectual, and volitional training; and (3) Education in its Particular Systems, being an historical review, from the standpoint of Hegel's "Phenomenology of Spirit," of the world's systems of education.

The volume of Herbert Spencer on "Education," published in America in 1861, has been one of the most widely read and influential of the books on education of the last half-century. He raises the question, "What knowledge is of most worth?" and discusses the nature of intellectual, moral, and physical education.

These two discussions of Rosenkranz and Spencer, as do almost all of the theoretical treatises on the nature of education, omit entirely the consideration of the nature of æsthetic education. The education of the emotions, ending in the appreciative sense of

the beautiful, is an unwritten chapter in educational theory. The explanation of this omission is doubtless the late recognition, beginning with Rousseau, accorded the feelings as real elements of psychic life. But there is no excuse for this omission from the point of view, either of the importance of the emotions in life, or of their fundamental place in the structure of body and mind of the individual. A new philosophy of education must supply this lack.

5. Field of This Inquiry.

Such are the four points of view in their mutual interdependence that may be utilized in the study of the education of the school. Now, what are the self-imposed limits of the present task? Passing by the history, the science, and the practice of education, our sole present inquiry concerns the answer to the last-named question, viz., What is education? What, from a fundamental point of view, is the nature and meaning of education? What is the philosophy of education? In the answer to this question, if true, the history, the science, and the practice of education will find satisfaction.

In any inquiry which attempts to be ultimate, to go to the bottom of a matter, which is the essential characteristic of philosophic thinking, two questions must be asked and answered. The first is, What are the facts in the case under consideration? The second is, What is their meaning? Both the dream and the interpretation thereof is expected in a philosophic investigation. The present inquiry, in so far as it concerns itself with the facts of education, will take us far afield into the related natural, social, and mental sciences, will occupy most of our attention, and

will furnish us with the data for the final answer to our question, What is education? This part of the inquiry may be called empirically philosophical, and comprises the following six chapters of the book. For the second question, What is the ultimate meaning of the educational process? the only method of answer is that of following out into some final form the suggestions, the intimations, the implications, of our present collected, though fragmentary, group of educational facts. This method may be called the purely philosophic, and the answer that it affords to our question is attempted in the last chapter of the book.

6. Division of the Field.

It must always be remembered that the term *education* is abstract, that education itself does not exist except as a concept of the mind, that the concrete existent thing is always some being or beings educated or to be educated. The educable being, the individual child, — he is the concrete thing with which our discussion has to do. The nature of man, as the subject for education, determines the nature of education, and suggests the lines of inquiry in our chosen field. When we ask concerning the nature of man, the being to be educated, we are confronted by an old and new view. Man, in his isolation and remoteness from the world of nature and animals, has been sufficiently emphasized in the generations hitherto. It is the growing habit of our own generation to consider man in his integrity with the remainder of creation. The conception of the unity of the world of creatures has been brought into clear consciousness through the method and the doctrine of

evolution. This point of view characterizes the thinking of the latter half of the nineteenth century. It has been widely applied to various data of thought, as religion and theology, society, philosophy, and history, outside of its chosen domain of natural science, and with uniformly suggestive results. It remains, among other possible applications, to apply the conception of evolution to the theory of the nature of education. The following inquiry has attempted to throw what light evolution can give upon the subject of education.

Adopting the new view that considers man in the perspective of his historic background, in his integrity with the remainder of creation, we may note four common possessions that he shares with the lower animal world; viz., he possesses life, his life takes shape in a physical form, he goes in groups with his fellows, and he has intelligence. Life is the great fundamental fact; with this we start. And life is always embodied in some form as its vehicle, hence the body as the bearer of life. And this life in physical form finds its completion only in other life similarly embodied; hence the groupings of lives. And life in the body in companionship with other life needs conscious direction, and this is the function of intelligence.

These common characteristics as shared by man differ prodigiously from themselves as shared by the lower animals, but not absolutely. Each of these characteristics is a field for special scientific research, and concerning each of them a body of knowledge has grown up using comparative methods of study. The knowledge of life is called biology, of the body

in which life takes form is physiology, of the groupings of life is sociology, of the intelligence that directs life is psychology, and of the meaning of life is philosophy.

Here, then, we have the outline of our inquiry. The nature of education, which is our quest, depends upon the nature of the man to be educated. What, then, have the essential sciences of man to say concerning our question, What is education? Biology, as the science of life in organic forms, ought to furnish a primary and elemental conception of education, whose function, as Spencer defines it, is to fit for complete living. Physiology, as the science of the function of the organs of the body, ought to be able to add conceptions of the first importance concerning the education of the body, without which any succeeding education is baseless. Sociology, as the science of society, of men in organized masses, ought to enlarge still further our conception of that education which socializes the individual and makes of him a desirable member of human society. Psychology, as the science that describes and explains mental phenomena, that analyzes and gives causes for mental states, ought to show the effect upon the mind of that education which aims to develop the power of mind and train to efficiency its natural capacities. And finally, philosophy, as the science that attempts to unify experience into some systematic and self-explaining whole, ought to be able to indicate whether education is a superficial excrescence on human life, or whether it is fundamental in the structure of things and possessive of deep-lying implications concerning

that which is invisible and eternal. The answer to our single inquiry gives us, then, the pain of seeking it through the finite facts of our human experience, and finally into the transcendent world which our present fragmentary experience suggests but does not yet compass. In consequence, let us consider —

(1) The Biological Aspect of Education.
(2) The Physiological Aspect of Education.
(3) The Sociological Aspect of Education.
(4) The Psychological Aspect of Education.
(5) The Philosophical Aspect of Education.

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CHAPTER II

THE BIOLOGICAL ASPECT OF EDUCATION

There is a natural human prejudice against considering man as an animal. This prejudice is doubtless due to many centuries of emphasis upon himself as the lord of creation and to corresponding centuries of ignorance of the nature and intelligence of animals. This prejudice, as such, is ill-founded; but it serves a good purpose as a warning against taking man as a mere animal, against that position which expects little of man because of his underlying animal nature. Man is not a mere animal, nor even a mere man. An animal is not a mere animal, but, like man, has affinities in his nature with those beings that come both before and after him. The creation is one from lowest matter to highest mind, and nothing occupying a place in this creation is merely itself. In considering the biological aspect of education, let the prejudice, then, against considering the original animal likenesses of man be laid. That for which this prejudice rightly stands will receive its meed in the later discussions.

Biological problems underlie educational problems. They deal with life in its adjustment to its environment. Indeed, Herbert Spencer, one of the first, in time and importance, of the modern students of or-

ganic and vital problems, claims that life consists in the proper adjustment between the inner and the outer, in right correspondence to environment. The Promethean spark of life itself eludes as yet human search, but Spencer has rightly named one of the conditions of its manifestation. The same writer has told us most strongly that, "to prepare us for complete living is the function which education has to discharge." Manifestly biology as the science of life in its first and elemental manifestations has something to say to that education whose function it is to make life complete.

The Facts of Biology significant for Education.

There are three facts known to biology, and to other sciences as well, which are significant for education. These are, (1) the increasing size of the cerebrum, or hemispheres of the brain, both absolutely and relatively to the size of the body, in the ascending scale of mammals; (2) the prolonged period of human infancy in comparison with lower animals; and (3) the brain as the organ of the mind.

The Increasing Size of the Cerebrum in Mammals.

Let us consider these biological facts in succession in their bearing on education. And first, the increasing size of the cerebrum in mammals. The titanotherium, an extinct mammal of the Middle and Lower Tertiary periods, a true rhinoceros, had certainly not more than one-fifth of the cerebral nervous substance which is possessed by the living rhinoceros of to-day. Yet in bulk this creature was as large, if not larger, than the largest present rhinoceros. So again, as compared with the more ancient pithecoid genera, the more recent and related, though not in direct line of descent, genus *Homo*

has an immensely increased mass of cerebral tissue. Yet there is little difference of bodily structure. An ape's brain is $\frac{1}{29}$ the weight of its body; a human infant's brain, where the proportion is larger than at any time later in life, is $\frac{1}{7}$ the weight of its body; at three years old the brain of the human child is $\frac{1}{18}$ the weight of its body; and in adult life the proportion has decreased to $\frac{1}{45}$. This increase of the absolute size of the cerebrum in man in comparison with the collaterally related pithecoids accounts for the fact that the ape and the lowest type of man differ in intellectual range far more from each other than the lowest and highest types of man. In fact, with the exception of the whale and the elephant, man has absolutely the largest brain of all the creatures. An ox of a ton's weight has a smaller brain than a man of a hundred weight.

This increasing size of the cerebrum, as one ascends in the scale of existence, is characteristic not only of the mammals, but also of the reptiles, which preceded the mammals in temporal origin. A consideration of these facts leads Professor E. Ray Lankester to summarize the situation in these words, quoted from the highly suggestive article referred to in the list at the close of this chapter, "Recent forms have a greatly increased bulk of cerebrum, as compared with their early Tertiary or mesozoic forbears." And in general the fact probably is that in every class of the animal kingdom recent forms have a cerebral mass much larger than that of extinct forms.

Its Significance.

Now here is a biological fact, which, it was asserted, has significance for education. What is this signifi-

cance? In looking for the meaning of the increased size of the cerebrum in mammals, the highest form of organic creature, it might be thought at first that the power of control of the body was thereby increased. Such, however, does not seem to be the case. The nerve centres of the ancient creature, though small, were sufficient to control his body. He lacked not so much the capacity to do with his body what he wished, as the capacity to frame the conception of what were good to do. The mouse to-day has more cerebrum than a lizard, but hardly controls its body better. The average male brain weighs forty-nine ounces as against the average female brain of forty-four ounces, yet man does not control his body even as gracefully as woman.

The question recurs, then, as to the significance of the larger cerebral mass. Significance it has, and some purpose it serves, else it would not have been selected in the process of natural development. All experiments upon the brain to-day go to show that the function of the cerebral hemispheres is that of deliberate action. The lower centres act automatically, from habit, and from immediate present stimuli; the higher centres act with deliberation, in new ways, and in response to remote or future stimuli. It is the lower centres that receive and convey hereditary endowments of reflexes and instincts. It is the higher centres that arbitrate between competing instincts and that secure adjustment to novel situations. The increasing size of the cerebrum, of the higher centres, means, then, the transfer of life from the instinctive to the rational basis, means that the organism which

can act from remote, as well as from immediate, stimuli is at a distinct advantage in comparison with the organism that reacts only to immediate stimuli. The cerebrum is the reservoir of experience of the individual, whence he may draw considerate, and hence desirable, reactions to stimuli. It makes learning possible, as an appendix to inherited instinct. Man, the highest of the mammals, has not fewer instincts than the lower animals, but he has a greater capacity than they, owing to his enlarged cerebral tissues, to delay reaction to stimuli, to learn from past experience, to adjust himself to new situations, and to form, in the course of his individual growth, new and delicate nervous reactions. An instinct is an inherited nervous mechanism which goes off, like an alarm clock, at the proper stimulus and moment. As the size of the cerebrum increases, the number of instincts do not decrease, but the creature becomes less and less dependent upon his instincts for survival and more and more dependent upon judicious selection among his instincts and upon what experience in his own individual case teaches. In the history of mammals the ability of the individual to learn has been a superinduced perfection upon the basis of racial instinct. In brief, *the increased size of the cerebrum in mammalian forms signifies educability.* The very possibility of receiving any education at all is due to the existence of the enlarged cerebral mass. This is the significance for education of the first of the three biological facts.

A more discriminating statement of the evolutionary way in which the hemispheres became the seat

of intelligent functioning is found in the following words of Professor William James :—

"All nervous centres have then, in the first instance, one essential function, that of 'intelligent' action. They feel, prefer one thing to another, and have 'ends.' Like all other organs, however, they *evolve* from ancestor to descendant, and then evolution takes two directions, the lower centres passing downwards into more unhesitating automatism, and the higher ones upwards into larger intellectuality.

"Thus it may happen that those functions which can safely grow uniform and fatal become least accompanied by mind, and that their organ, the spinal cord, becomes a more and more soulless machine; whilst on the contrary those functions which it benefits the animal to have adapted to delicate environing variations pass more and more to the hemispheres, whose anatomical structure and attendant consciousness grow more and more elaborate as zoölogical evolution proceeds. In this way, it might come about that in man and the monkeys the basal ganglia should do fewer things by themselves than they can do in dogs, fewer in dogs than in rabbits, fewer in rabbits than in hawks, fewer in hawks than in pigeons, fewer in pigeons than in frogs, fewer in frogs than in fishes, and that the hemispheres should correspondingly do more. This passage of functions forward to the ever enlarging hemispheres would be itself one of the evolutive changes, to be explained, like the development of the hemispheres themselves, either by fortunate variations or by inherited effects of use. The reflexes, on this view, upon which the education of our human

hemispheres depends, would not be due to the basal ganglia alone. They would be tendencies in the hemispheres themselves, modifiable by education, unlike the reflexes of the medulla oblongata, pons, optic lobes and spinal cord." [1]

It would seem that in man alone of the mammals has the cerebrum developed to the extent of limitless educability. Certainly he is the most educable of the animals. Indeed, perhaps it is only through courtesy that we are permitted at all to speak of educated animals. Trained they certainly are through the processes of associative memory; but educated, in the sense that they comprehend what they are about, and the meaning of the process, perhaps they are not.

The Advantage of Educability over Instinct.

An advantage of the combination of educability and instinct over instinct alone is what we should expect from the fact that the combination has itself come to exist in the history of organic forms. The advantage is also obvious. Direction by instinct alone makes the creature an automaton, with predictable reactions, and with little power of adaptation to varied conditions. Direction through learning, working with and upon instinct, make the creature a person, with unpredictable conduct, and with great power of mental adaptation to varied conditions. The reaction due to an instinct is general and expressive of what unnumbered ancestors have done in similar situations; it is unconsidered. The action due to education is specific and expressive of the need of the moment; it is considered. Education means

[1] James, "Principles of Psychology," Vol. I, pp. 79 *et seq.*

that the judgment of the individual is added to the past experience of the race in the determination of conduct. It means that the elaboration of the new is added to the transmission of the old. Conscious rapid progress, dependent upon the insight of the individual, in contrast with unconscious slow progress, dependent upon the experience of the race, becomes possible.

On the advantage of educability over instinct, I cannot do better than refer again to the admirable language of Professor James, as follows: "In the human race, where our opportunities for observation are the most complete, we seem to have no evidence whatever which would support the hypothesis, [the inheritance of acquired characteristics] unless it possibly be the law that city-bred children are more apt to be near-sighted than country children. In the mental world we certainly do not observe that the children of great travellers get their geography lessons with unusual ease, or that a baby whose ancestors have spoken German for thirty generations will, on that account, learn Italian any the less easily from its Italian nurse. But if the considerations we have been led to are true, they explain perfectly well why this law *should not* be verified in the human race, and why, therefore, in looking for evidence on the subject, we should confine ourselves exclusively to lower animals. In them fixed habit is the essential and characteristic law of nervous action. The brain grows to the exact modes in which it has been exercised, and the inheritance of these modes — then called instincts — would have in it nothing surprising. But in man the nega-

tion of all fixed modes is the essential characteristic. He owes his whole preëminence as a reasoner, his whole human quality of intellect, we may say, to the facility with which a given mode of thought in him may suddenly be broken up into elements, which recombine anew. Only at the price of inheriting no settled instinctive tendencies is he able to settle every novel case by the fresh discovery by his reason of novel principles. He is, *par excellence*, the *educable* animal. If, then, the law that habits are inherited were found exemplified in him, he would, in so far forth, fall short of his human perfections; and when we survey the human races, we actually do find that those which are most instinctive at the outset are those which, on the whole, are least educated in the end. An untutored Italian is, to a great extent, a man of the world; he has instinctive perceptions, tendencies to behavior, reactions, in a word, upon his environment which the untutored German wholly lacks. If the latter be not drilled, he is apt to be a thoroughly loutish personage; but, on the other hand, the mere absence in his brain of definite innate tendencies enables him to advance by the development, through education, of his purely reasoned thinking, into complex regions of consciousness that the Italian may probably never approach.

"We observe an identical difference between men as a whole and women as a whole. A young woman of twenty reacts with intuitive promptitude and security in all the usual circumstances in which she may be placed. Her likes and dislikes are formed; her opinions, to a great extent, the same that they will be

through life. Her character is, in fact, finished in its essentials. How inferior to her is a boy of twenty in all these respects! His character is still gelatinous, uncertain what shape to assume, 'trying it on' in every direction. Feeling his power, yet ignorant of the manner in which he shall express it, he is, when compared with his sister, a being of no definite contour. But this absence of prompt tendency in his brain to set into particular modes is the very condition which insures that it shall ultimately become so much more efficient than the woman's. The very lack of preappointed trains of thought is the ground on which general principles and heads of classification grow up; and the masculine brain deals with new and complex matter indirectly by means of these in a manner which the feminine method of direct intuition, admirably and rapidly as it performs within its limits, can vainly hope to cope with." [1]

The Mental Basis of Natural Selection.

For the transmission of instinct or old brain mechanism, only a comparatively small amount of cerebral tissue was necessary; for the possibility of education, or the formation of new brain mechanism, a much larger amount of cerebral tissue is necessary. The necessary size of the cerebrum, known as a biological fact, would seem to indicate that in all vertebrates there has been a continual tendency to impose educability upon instinct. Because of the accruing advantage, those forms with the smaller brains were unfitted to survive in the struggle for existence with brains of increasing size. Whence it appears that the brain, following after the general bodily structure,

[1] James, "Principles of Psychology," Vol. II, pp. 367 *et seq.*

and during an enormous period and gradual development, is the last organ of selection, and evolution begins to proceed on the mental instead of the hitherto physical basis of selection. Thus education from the biological point of view cannot be regarded as a superficial impingement upon the life of the organism, but as the very condition of its highest development and best adjustment to its environment. Education is not an unessential side-play in the world's drama of progress, but is written largely in the very constitution of a growing universe. Adaptation by mental power takes the place of adaptation by bodily structure. The capacity of learning from experience and being taught in one's individual lifetime defeats the otherwise triumphant transformation of the organs of the body. To get food from trees, the giraffe develops a long neck, the elephant develops a trunk, the bear strength of body, the ape the ability to climb ; and man alone uses a ladder or an axe. Mind is an organ of superior adjustment to environment. It is the most useful apparatus of the organism in keeping it from immediate reactions, in delaying action pending consideration, and in discovering new and better relations to surroundings. Man has not the bodily strength of the horse, nor the health of dogs, nor the age of whales, nor the endurance of the ox ; but he survives easily, nevertheless, because he has superior intelligence, the power of symbolic thinking. Oliver Wendell Holmes I think it is who says somewhere that the difference between $1+2$ and $x+y$ is that between savagery and civilization.

From the discussion as thus far advanced, on

Biology and Education.

the first of the biological facts that have significance for education, it is evident that instead of antagonism there is really large coincidence between biological and educational points of view. Education can be helpfully defined, in the first instance, from the biological standpoint. Mind, which along with the body, is the subject of education, is a useful addition to the organism. Education provides such conditions as enable men to react on the outer world in a useful way. By an intentional arrangement of stimuli, education produces such changes in the brain as insure safe later reactions upon the world. Biologically, education is the formation of suitable habits of reaction or stimuli. As Professor Adam Sedgwick says, "Education is nothing more than the response of the nearly mature organism to external stimuli . . . the penultimate response of the zygote to external stimuli, the ultimate being that of senile decay, which ends in natural death."[1]

Nature and Nurture.

The lower animals and savages live under simple and comparatively unvarying conditions; civilized man lives under complex and rapidly varying conditions. What Nature unassisted can amply do for the former in their preparation for life, she cannot do for the latter. Education, as the coadjutor of Nature, provides man for reaction in a civilized community. And, as Nature is the kind mother of the lower creation, so is the school, not destroying, but utilizing and transcending, the powers of Nature, the Alma Mater of civilization. What Nature could not do in that she

[1] Article in *Science*, June 8, 1900, "Variation and some Phenomena connected with Reproduction and Sex."

was weak through her bondage to the law of inherited habit, Education, making capital of the forces of Nature, and becoming itself a kind of Higher Nature, achieved in breaking those bonds asunder, and is become the potency of freer and more responsible living. The adjustment to environment which education can give is superior to that which the lower animals enjoy or to that which Nature unassisted can give to man. (The term *Nature* means here all the forces of life except those which man consciously [Rousseau would prefer to say, worse than uselessly] brings to bear in the amelioration and elevation of his own existence. It may be rightly said, however, that such effort on the part of man is itself a product of Nature, and is natural, and, in this sense of the word, education is itself one of the last and highest kinds of natural things. The term *Nature* is one of the worst abused in our language, and needs definition wherever used. The above discussion attempts to turn on ideas and is devoted to no particular terminology.)

To recur, after a long interval, to our primal question, What is education? and to concrete the biological discussion as thus far advanced, it may be said in answer, that, *Education is the superior adjustment of a human being to his environment.*

The Prolonged Period of Human Infancy.

Now for our second biological fact. The period of human infancy is prolonged beyond that of any other creature. In the lowest organic forms birth is by partition of the parent, not by parturition. In such a case there is no infancy, no period of helpless dependence on the parent organism. As the mental life becomes more complex, and as the conditions of

this change, the period of infancy lengthens. In some of the higher vertebrates, both birds and mammals, the young cannot take care of themselves immediately after birth. This is particularly true of the anthropoid apes. At the age of a month, the young orang-outang is just beginning to learn to walk, whereas a monkey has already learned the use of hands and feet. The period of infancy in savage life is years longer than in any lower mammalian life, and in civilized life the years of infancy are extended, in the estimation of medical jurisprudence to seven years, in the eyes of the law to eighteen and twenty-one usually for female and male respectively, and, from the point of view of complete education, to a quarter of a century or more. During this greatly extended period those who are to live by the products of mental work are devoting themselves to developing productive efficiency, and remain more or less dependent upon parental or institutional support. The longer period of infancy of man as compared with woman, which fact is recognized in the legal distinction of the ages of freedom, is doubtless a kindred fact.

The Final Cause of Protracted Infancy.

What is the cause of lengthening infancy in organic evolution? As the situations of life become increasingly complicated with the higher creatures, it becomes more and more difficult for all their desirable reactions to be organized at birth as instincts. Consequently the period of preparation for living is extended beyond birth or infancy, and education does consciously in infancy after birth what nature does unconsciously before birth. Infancy thus is a sign that the organism possessing it has a complicated destiny. The

adjustments to his environment made by man are manifold more in number, more complex in kind, and more delicate in nature, than those made by the lower animals. Man's life being thus extremely varied and its situations so numerous, any one situation is not repeated as often as in the lower animal's monotonous life of hungering and hunting. Consequently Nature cannot fully prepare man in the pre-natal period for living, and all the adjustments, other than the instinctive ones, requiring, as they do, intelligence and reason, must be learned in the post-natal period. This learning is made possible, as the discussion of the first biological fact showed, through the increased efficiency of the brain in its cerebral hemispheres. To answer the question of this paragraph in brief, the cause of infancy is the necessity of adequate time for preparation for complex living.

The Significance of Infancy.

Now, what is the significance for education of the period of infancy? The lamented Professor John Fiske was original in his contribution of the doctrine of infancy to the theory of evolution. He discussed its significance for society as a whole and not simply for education as a social institution. "Infancy, psychologically considered," he says, "is the period during which the nerve connections and correlative ideal associations necessary for self-maintenance are becoming permanently established. . . . The increased complexity of psychical adjustments entailed the lengthening of the period required for organizing them; the lengthening of infancy, thus entailed, brought about the segregation, into permanent family-groups, of individuals associated for the per-

formance of sexual and parental functions; the maintenance of such family-groups involved the setting up of permanent reciprocal necessities of behavior among the members of the group," etc.[1] This is Professor Fiske's well-known doctrine of infancy as partly responsible for the institution of the family in society and of morality in man.

It remained for Professor Nicholas Murray Butler to interpret the significance of infancy for education, as Professor Fiske had done for society, which he does as follows: "The rich suggestion that this doctrine of Mr. Fiske and this conception of modern science have for us, seems to me to be this: The entire educational period after the physical adjustment has been made, after the child can walk alone, can feed itself, can use its hands, and has, therefore, acquired physical and bodily independence, is an adjustment to what may be called our spiritual environment. After the physical adjustment is reasonably complete, there remains yet to be accomplished the building of harmonious and reciprocal relations with those great acquisitions of the race that constitute civilization; and, therefore, the lengthening period of infancy simply means that we are spending nearly half of the life of each generation in order to develop in the young some conception of the vast acquirements of the historic past and some mastery of the conditions of the immediate present."[2] In brief, infancy is the period of plasticity, the period of growth, in which that superior adjust-

[1] "Outlines of Cosmic Philosophy," Vol. II, pp. 342, 369.

[2] "The Meaning of Education," p. 13.

ment to environment which constitutes education is effected.

To summarize, the discussion of the second biological fact adds to the conception of education as reached at the end of the consideration of the first biological fact, namely, education is the superior adjustment of a human being to his environment, the element of the time when this adjustment is achieved; and further, it puts new significance into the term *human* in the definition.

The Brain as the Organ of the Mind.

But there were three biological facts that had significance for education, and it remains to consider the third, viz., the brain as the organ of the mind.

History of Localization of Mental Function.

The brain, for a long time, has been thought by some to be the organ of the mind; but only for a short time, since modern pathology and anatomy, has it been so conceived by all. Aristotle located the mental functions in the heart. Ancient physicians, the prototypes of the modern physiological psychologists, located wisdom in the heart, joviality in the spleen, anger in the gall, love in the liver, and vanity in the lungs, whence a man might literally be puffed up with vanity. The supposed origin of melancholy, black bile, gave it, etymologically, its name. Even to-day common usage of language makes the heart the seat of the affections, the emotions, and the moral qualities, and the head the seat of the intellect, as in the oft-made contrast between education of the head and heart. Hippocrates, 460–320 B.C., may possibly have known that the brain is the seat of the mind, though Herophilus of Bithynia, 300 B.C., is reported by Galen as having been the first to hold this position.

Proof of the Correlation of Brain and Mind.

To-day four lines of proof indicate the brain as the organ of the mind, — indicate, that is to say, that mental functioning is, in some way, as yet only theoretically understood, correlated with the functioning of the brain. The evidence is pathological, anatomical, vivisectional, and from common experience. Pathologically, it is shown by autopsies that different mental diseases are due to lesions in different portions of the brain. Anatomically, it is shown that afferent nerves from the sense organs lodge in the brain. The stimuli that they carry result in molecular changes in the brain, corresponding to sensations in the mind, and from the brain these stimuli are redirected through efferent nerves or motor reactions. Vivisectionally, the loss of certain portions of the brain of lower animals, as, for example, the hemispheres of a frog, produces characteristic changes in conduct. In this particular instance the reactions to given stimuli are no longer unpredictable, as normally. Finally, the effect of stimulants, narcotics, and fevers upon consciousness is a matter of common experience. Directly these stimuli are changing the brain states, indirectly they affect consciousness.

There is a fifth line of evidence to show that the brain is the organ of the mind, but it is not yet sufficiently made out, however, to justify its inclusion among the lines of proof. It is known, with notable exceptions, that large brains generally correspond with intelligence; but it is doubtless true that fineness of organized structure, intricacy of convolution, and development of the associative fibres have more to do with intelligence than brain weight alone. Quality alone is

better here than quantity alone, within the natural limits, though both combined would seem to be the desideratum. The most recent investigations seem to confirm the impression that large brains are the organs of superior intelligence. Thus M. Manouvrier writes concerning the production of large brains, "The first factor is evidently intellectual superiority, since, for equal height, a series of intellectually distinguished men exceeds the general average in brain-weight by about 150 grams."[1] The same writer points out, however, that the brain-weight increases more rapidly in proportion to the intelligence because "the surface increases only as the square of the linear dimension, while the volume increases as its cube"; also he thinks that large brains go with large bodies, an increase of brain-weight of about 12 per cent being secured by an increase of bodily weight of 30 per cent.

Significance for Education of this Fact.

Accepting, then, the position that the brain is the organ of the mind, and that brain states are the *sine qua non*, at least in our present existence, of mental states, it is manifest that education, from the bottom point of view, consists in structural modification of the brain and of the central nervous system of which the brain is headquarters. Without the development of the sensory and motor regions of the brain, the fruits of education in the mental powers of observation, perception, reasoning, and volition cannot be reached. Mental habits are primarily brain habits. Mental inefficiency is first brain inefficiency.

It was the custom of educators until two genera-

[1] Quoted in *Literary Digest*, Nov. 21, 1903.

tions ago, when physiological psychology arose (partly in consequence of the newly awakened consciousness of biological problems), and it is still too commonly the custom, to regard mind as independent *in toto* of "the tenement of clay," as Locke called the body, in which it resides. The old sharp line of cleavage between the body and mind, which was erased by such books as Maudsley's "Physiology and Pathology of Mind," had to do with the formerly common distinction between the secular and the sacred. The conception of reality as an interrelated unity of experience is a contribution of the nineteenth century scientists and philosophers alike to the world's thought.

Educators must yield the theory that the mind is an isolated and unattached entity caught for a time in this mundane sphere and detained in the body as its prison-house, in favor of the theory that mind and body together constitute one organic unity. Gladly ought this transfer of theories to be effected in view of the resulting, new, and serviceable means of education thereby attained. The discipline of the body, of the hands, of the senses, is also a discipline, though not the only discipline, of the mind. It is this reënforcement of hitherto simply mental means of education by physical and physiological means which is the significance for education of the third biological fact, and which is the explanation of certain of the newer elements in the growing curriculum of to-day. Education is not transformations of an immaterial entity which is ageless and capable of being influenced as easily at fifty as at fifteen, and

of becoming with any late start all that it might ever have been. It is always too late, so far as our present knowledge goes, to be what one might have been.

Education is primarily modification of the central nervous system. It is much more, as we shall see; but without this foundation it could not be. Because of the changing character of this nervous system, education must do its great work while it can. In his foundational work on "The Education of the Central Nervous System," Mr. Halleck uses this language in his preface: "If brain cells are allowed to pass the plastic stage without being subjected to the proper stimuli or training, they will never fully develop The majority of adults have many undeveloped spots in their brains." Education must strike the central nervous system while it is plastic. The plasticity of the nervous system means that the individual is capable of being influenced by his surroundings, yet without the sacrifice of his individuality. Plasticity begins with life and reaches its height perhaps at about eighteen years of age. After twenty-five a new science is rarely acquired or a foreign tongue spoken without accent. The fibres of association in the brain increase in number till the approximate age of thirty-three, after which time how hardly shall a man acquire a new idea except in his own field! What the youth does not learn, the man, outside of his own line, will not. He may flatter himself that, like Cato, he can learn a new subject when he is old, only to find, as a rule, when he begins the task, that he is not a Cato, that the time is past for all that sort of thing. A man is little more than

the sum total of the nerve reactions made habitual in his youth. Whatever else he may become is due to that mental factor, to be considered in Chapter VI, which we call effort. And even with effort he will have great difficulty in overcoming the results of wrongly trained motor nerves in youth which remain to vex us in age. The boy that cannot spell has few chances in his favor as a man. The youth in whose nervous system have not been well laid the two pillars of sensory and motor training, the getting of all the sensations that the organs of sense make possible and the proper reaction upon them, cannot hope to have reared in his case the superstructure of man's highest thought and feeling and action. Every sense must be trained by use, and self-expression must accompany the reception of sensations and ideas. Only so is the nervous system made the ally and not the enemy of the educator.

The nature of the nervous system warns us not simply against inadequate physiological foundations for education, and against frittering away the educational opportunity in the plastic period of youth, but also, and particularly in our day of unprecedented commercial activity, against abbreviating the educational period of years which nature designed. The full development of the brain is not reached until maturity. The male brain reaches its maximum weight at fifteen years of age, and later becomes slightly less. The female brain is earlier in reaching its full weight. The growth of the brain, which is responsible for its increased weight, consists in the enlargement of the nerve cells and in the multiplication of the fibres.

The development of the brain, which, rather than its growth, is responsible for the quality of the intelligence, consists in the separation of the organs of the brain from each other and in their reunion through the fibres of association, the brain itself becoming thus one of the best illustrations from the natural world of an organic unity through variety, of an integrated heterogeneity. Such is the marvellous mechanism with which the conscious life of man is associated. Its highest centres, the frontal lobes, with which probably one's serious thinking is done, are not developed fully in childhood, but only at adolescence do they begin to be serviceable in the highest way to the individual. To continue the training of the nervous system through youth is actually to lengthen the period of plasticity in individual cases to an appreciable extent, with all the enlargement of possibilities which this entails. To leave certain portions of the nervous system neglected is to invite earlier decay of those parts. To omit the most careful and systematic training of the senses while the sensory regions of the brain are growing together by means of those associative fibres which condition the exercise of judgment and reason is to inhibit the best development of these highest powers of consciousness. It is only an all round development of the whole nervous system during the growing period that is the surety of an integral individual and an all round education which men so praise. What a rude violence is done nature's gifts when children are taken from primary and secondary schools and made to become winners of bread for the family! Or when

children are cast upon their own resources in the big world! It is a physical sin when the problems of mature life, either theoretical or practical, are forced upon the immature child. Our American life, particularly in the factory towns, is in danger of gaining the world and losing its own soul.

What can Education do for the Brain?

Admitting as now manifest that, from the point of view of the third biological fact, education consists in modifications of the brain and central nervous system, the difficult question arises as to what education can really do for the nerve cells of the brain. The temptation is strong upon educators, particularly upon those who have not duly considered the physical limitations of mental development, to extend unwarrantably the possibilities of education. The greatest philosopher of the eighteenth century, if not of modern times, Immanuel Kant, showed this limitless view of what education could achieve. "Man can become man," he declares, "only through education; he is nothing but what education makes him." But this view is too generous. The brain cannot be born again through education. In capacity the brain once for all is what it is. Though smaller than its most ardent advocates would allow, the field of education is exceedingly real. It is in the realization of the innate capacity of the individual brain that education has its excellent task. Education is not a creator; there is but one Creator: education is a developer. Admitting that the inherent capabilities of each brain are nature's original gift through hereditary endowment, the question recurs, What can education do for the brain?

Without exceeding the limits of conservative estimate in this largely unexplored matter, it is safe to say that education can develop and strengthen the nervous tissue of the brain; can make new nervous connections and wear deeper old ones; can awaken the unawakened nerve cells of the brain; and can through the formation of habit set the mind free for new action and thought: in short, education can make the brain approximately as efficient an organ as it is capable of becoming. To stress these points briefly in succession: —

Development of Brain Tissue.

Mr. Halleck puts on the title-page of his book, already referred to, the following words of Drs. McKendrick and Snodgrass, "Just as muscular exercise causes an increased growth of muscular fibre, so regulated mental exercise must develop and strengthen the tissue of the brain."

Formation of New Nerve Connections.

Again, it is one of the unavoidable hypotheses of modern physiological psychology, which attempts to explain mental facts by their underlying brain equivalents, that perception, memory, habit, and acquired power are dependent upon nervous connections in the brain. Professor Bain first, and Professor James following, not to mention others, can explain memory or acquisition only as a series of new nervous growths, the establishment of a number of beaten tracks in certain lines of the cerebral substance. These nervous connections are often made for the first time through mental endeavors in response to educational stimuli, and are regularly worn deep and smooth through such influence. In making such figurative statements as the preceding concerning brain paths

made and worn smooth as the explanation of the mental phenomena of memory, habit, and the like, care must be taken to guard against the strictly literal interpretation. All that can be said is that these explanations are the most serviceable of the possible hypotheses, and may be true.

Quickening of Nerve Cells.

Again, with propriety is it claimed that education can awaken certain unawakened portions of the cells of the brain. Perhaps no brain is so normally educated that its maximum efficiency is attained. Among the most cautious of the students of the effects upon the brain brought about by external influence may be named Professor Donaldson, who (in Chapter XVIII of his "Growth of the Brain") uses the following language: "Education must fail to produce any fundamental changes in the nervous organization, but to some extent it can strengthen formed structures by exercise, and in part waken into activity the unorganized remnant of the dormant cell. No amount of cultivation will give good growth where the nerve cells are few and ill-nourished, but careful culture can do much where there are those with strong inherent impulses toward development. On neurological grounds, therefore, nurture is to be considered of much less importance than nature, and in that sense the capacities that we most admire in persons worthy of remark are certainly inborn rather than made."

Formation of Habit.

Lastly, it was mentioned that education could, through the formation of habit, set the mind free for new action and thought. A voluntary action made with deliberation requires the attention of the cerebral

hemispheres. Through frequent repetition this action becomes habitual, the lower centres of the brain can take care of it, and the higher remain free again for something new. The process thus briefly defined constitutes from Huxley's point of view the very possibility of education. After narrating the practical joke on the old soldier, now a table servant, who with a waiter full of dishes comes at sudden command to "attention," Huxley continues: "The possibility of all education (of which military drill is only one particular form) is based upon the existence of this power which the nervous system possesses, of organizing conscious actions into more or less unconscious, or reflex, operations. It may be laid down as a rule which is called the Law of Association, that if any two mental states be called up together or in succession, with due frequency and vividness, the subsequent production of one of them will suffice to call up the other.

"The object of intellectual education is to create such indissoluble associations of our ideas of things, in the order and relation in which they occur in nature; that of a moral education is to unite as fixedly the ideas of evil deeds with those of pain and degradation, and of good actions with those of pleasure and nobleness." [1]

This is habit, which the Duke of Wellington enthusiastically exclaimed to be "ten times nature." Through habits formed in school the nerve cells as I pen these lines take care of the writing, the spelling, and, for the most part, the expression, leaving the mind free to attend to the thought. Rightly trained

[1] Huxley, "Elementary Lessons in Physiology," p. 302.

nerve cells are the trusty servant, leaving the mistress of the household free to entertain her guests.

The law of association as stated above by Huxley, and which underlies the formation of habit, is particularly serviceable in educating instincts. Purely reflexly and instinctively, without malice or forethought, a youngster does things that are unbecoming socially. A word of admonition, a threat, or, finally, some penalty administered becomes associated with the performance of the act. This association once formed, the instinctive tendency to perform the act is inhibited by the thought of the undesired consequence of the act, or by the thought of approval that follows the non-performance of the act. Thus instincts become subject to direction by thought. And, happily for us, the desirable association, once formed and set in the grooves of the cerebral substance, becomes itself a kind of second instinct. Thus habit is the friend as well as the foe of the good. And when good action, that is, from the biological point of view, action which is preservative of the organism, has become habitual and not sporadic, we have what Aristotle called character. And from this point of view education itself becomes the process whereby useful reactions on stimuli are made habitual. The educational period is the habit-forming epoch in life.

The Inheritance of Educability.

In addition to the practically certain influences, just enumerated, of education upon the physical nature of the brain, there is yet another that we should like to think, and with some degree of assurance may think, results. It has to do with the effect

upon posterity of long lines of educated ancestry, and with the much-vexed question in biological circles of the inheritance of acquired characteristics. It is much safer and preferable, when possible, to explain results without the use of this principle for which such meagre evidence is forthcoming. Professor Donaldson, in Chapter XIX of his book already quoted, states the situation thus, "We feel . . . that the descendants of several generations of educated ancestors should have a nervous system favorably modified, more vigorous, more responsive, more accurate in its reactions, and growing, perhaps, for a longer time, thus extending the period of its adaptability. But for this the evidence must still be sought." On the other side, we have Professor Lankester, in the article already quoted, claiming the transmission of educability. It does not appear, however, whether this is done through inheritance or through the preservation of the more fortunate variations. On the same side such a leading educator and wide observer of educational effects as President Eliot speaks boldly out, "Thanks to the beneficent mysteries of hereditary transmission, no capital earns such interest as personal culture."[1] Of course, the education itself has to be acquired afresh by each succeeding generation. The question is whether the acquisition does not become easier with the lapse of time. The latest word on this subject is from Professor Karl Pearson in the Huxley Memorial Lecture for 1903. He writes: "There can, I think, be no doubt that *intelligence* or *ability* follows precisely the

[1] Eliot, "Educational Reform," p. 21.

same laws of inheritance as cephalic index or any other physical character . . . we inherit our parents' tempers, our parents' conscientiousness, shyness and ability, even as we inherit their stature, forearm and span. . . . If the conclusion we have reached to-night be substantially a true one, and for my part I cannot for a moment doubt that it is so, then what is its lesson for us as a community? Why, simply that geniality and probity and ability, though they may be fostered by home environment and good schools, are nevertheless bred and not created. The education is of small value unless it be applied to an intelligent race of men." [1]

These words from Professor Pearson are in line with the usual biological thought of the day. They do not permit us as teachers to consider education an inheritable possession from father to son; we are not endowing natures with capacities. But education seems rather to be one of those acquired characters, like the habits of speech, virtue, and temperance, which must be won afresh by each generation; we are developing capacities into realities. Natural and artificial selection improve capacities; education realizes them. Education is not a natural character capable of physical inheritance; it is an acquired character capable of social inheritance. That is, like tradition, it is passed on from one generation to another by invitation and word of mouth. It goes not like dispositions from bone to bone and flesh to flesh, but from hand to hand, as it were, like

[1] *Nature*, Oct. 22, 1903, "Inheritance of Psychical and Physical Characters in Man."

the way in which the son takes up the father's profession in life.

So far from discouraging teachers, this position ought to stimulate them to greater effort. If education is not capable of physical transmission from parent to offspring, the greater the importance that each generation be given its full benefit. There is encouragement also in the thought that social heredity is no less real a phenomenon than physical heredity. Thus teachers conscious of their task may believe they are laboring for future generations as well as for the present, for they are, through the influence of man on man, if not through the influence of man on the embryo.

Is Automatism the End of Education?

The last of the sure effects of education upon the brain mentioned above, viz., the formation of habits, whereby education itself is the process of making useful reaction reflex, raises a last question, with which the discussion of the third biological fact shall have an end. The question is a theoretical one and takes us into the future. It is this, Is a being all of whose actions are completely reflex and useful the end and aim of education? Suppose we reacted rightly and fatally to every situation which life presented, would we then have become the kind of beings that education should want to make? In such a case all intentions of ours would give place to mechanism, and all directive consciousness would lapse into faultless unconsciousness. In brief, Is automatism the end of education? The statement of the affirmative shall be made in the language of an advocate, "Every conscious act, every thought, every senti-

ment, presupposes an imperfection, a delay, a check, a want of organization ; if, therefore, to form the type of ideal man, we take the quality which all others presuppose, and which does not itself presuppose any other, — viz., organization, — and if we think of it as raised to the highest possible degree, our ideal of man is an unconscious automaton marvellously complicated and unified."[1] That is to say, human Frankensteins are the end of education.

In estimating this position, it is to be noted, first, that the automatic reflexes asserted to characterize the ideal man are the summations of past experiences. Hence the automaton would work in a stationary world where the present was like the past, and the future was barren. But our world is growing, and for the new situations that continually arise the reflex act is not sufficient. Consciousness is needed as an engine of direction, as a deliberator, as a facile adjuster to novel situations, and this entirely without regard to the mixed question of whether it is free or determined in its action. The utility of consciousness to the organism is evident from the fact that it has been developed and remains a characteristic of the highest mammals. Its function seems to be, biologically, to hold by the pleasant acts, and to let go the painful ones, thereby preserving and advancing the life of the organism by that general, though not exceptionless, law of nature whereby pleasure and profit and pain and harm go together in pairs. And

[1] Paulhan, "Le Devoir et la Science Morale," *Revue Philosophique*, December, 1886. Quoted and discussed in Guyau, "Education and Heredity," p. 283.

the present constitution of our changing world seems to render it likely that consciousness will remain an indispensable characteristic of the organism. Man's adjustment to his environment is not once for all, but is a growing adjustment to a changing environment. Unconscious habit can take care of the old in our environment, such as walking, dressing, eating, and much of our talking, indeed, all together, the larger half of our lives; but the new requires conscious attention. Huxley cannot be wound up morally to go forever right. Thus automatism as the end of education looks only backward and not forward. It is unpractical.

In the second place, the theory of the end of education as unconscious automatism does injustice to the nature of that consciousness which it regards as a passing phenomenon in upward evolution. In the words of Guyau, "Consciousness is not purely and simply an arrested reflex action, as contemporary psychologists so often define it; it is a corrected reflex action, brought into correspondence with the changes of the environment, wound up anew rather than stopped."[1] Only a being with a consciousness, permitting the mastery of the untried, can greet the unknown with a cheer.

Even if the theory of unconscious automatism were practical, even if that position did justice to the function of consciousness in life, still it would be an undesirable end of education. We like to be conscious, that is, we of the West, and we should not like any end of education that made us uncon-

[1] Guyau, "Education and Heredity," p. 284.

scious. Not simply does consciousness influence action in novel situations, but it lights up all action whatever, and we like to walk in its light. Through it we become the world's mirror. Apart from the pain that may attend physical dissolution, we fear the unconsciousness that may attend death. Consciousness is an agent, and as such justifies its existence from the biological point of view. It is also a spectator, and as such enables men joyously to see and to perceive as well as to act.

There are several additional services consciousness renders the human organism, not explicitly involved in the theory of automatism, but which render it impossible ever to exclude consciousness from a definition of the end of education. It is the guardian of those very habits which, when once consciously acquired, continue to act so automatically and serviceably. It gives us the sense of time, involving memory, history, and prophecy, without which man could not look before and after and sigh for what is not. Again, by holding up an object to be striven for, it makes demands on the latent energy of our organism, even if, as against what some experiments would go to show, it does not actually add thereto. No work in fineness or in extent is comparable to that done under the stimulus of a pressing ideal. And again, consciousness gives us ideas as ends of action. An idea pursued is an ideal. Thus consciousness makes possible morality, which is action according to ideas. A right idea that appeals to consciousness with force is felt as an obligation, while a wrong and appealing idea is

temptation. And yet again, consciousness makes us social by including the world of our fellows as objects of imitation, competition, affection, and sacrifice.

Thus at the end of the protracted discussion of the third biological fact, viz., the brain as the organ of consciousness, we are prepared to insist that the being to be educated must be, and must remain, conscious. Must remain conscious because of the indispensableness, as described, of that attribute. Must be conscious in order to frame to himself a conception of the end which, in his own case, it is the design of education to attain. Including, then, the element of consciousness in the answer to the original question as to the nature of education, we are prepared to say at the end of the discussion of the biological aspect of the subject, that *Education is the superior adjustment of a conscious human being to his environment.*

First Definition of Education.

There is the skeleton of our final conception of the nature of education, but it remains to clothe it with flesh and blood and meaning. Biology, dealing with life processes, can start us aright, but since, like other sciences, it is but one of the ways of looking at life, its message alone is not final. It deals with the way in which organic life develops, but not with the origin or with the significance of that life. The results of biology are many, but its main characteristic is its method, its evolutionary point of view in any object of study. We have had its suggestive word as to the theory of education. But even in a purely theoretical inquiry, as this intends primarily to be, we must not lose whatever practical

word, as a consequence of its theory, biology has to say to us as educators. So our last paragraph must be devoted to the consequences for education of the biological point of view.

Consequences for Education of the Biological Point of View.

(1) The Practical is the Basis of the Theoretical.

In the first place biology, with its emphasis on life as adjustment between the inner and the outer, puts the practical at the bottom of the rational and the speculative. The first thing is to exist, to live, and this is a practical matter. After that one may pursue ideal ends. But unless the ideal ends themselves are in some way contributory to living, in the wider sense of appreciation, if not in the narrower sense of physical existence, then are they phantasms. This is the basis for the philosophical doctrine of "pragmatism," whose test of truth is touch with life. In the field of education this means that the prime thing concerning any educational theory is not, whether it is new or old, but whether its practice furthers sound education.

(2) Consciousness is a Useful Addition to the Organism.

In the second place, biology has its own notion of the purpose consciousness serves in the world. Primarily it is not declaratory of ideals, but a useful addition to the organism. The last agency developed by the organism in its growing attempt to come into the most practicable relations with its environment is consciousness. Our reason is first of all our guide; later, it is the solver of our problems. It is more evident in the case of the lower animals that intelligence is for action rather than for thought's own sweet sake. In the language of our master craftsman in the field of psychology applied to teaching, "Consciousness would thus seem

in the first instance to be nothing but a sort of superadded biological perfection, — useless unless it prompted to useful conduct, and inexplicable apart from that consideration."[1] It must be recognized, of course, that emphasis upon consciousness as practical by no means detracts from its function in life as theoretical, by means of which latter function it makes of man the only metaphysical animal. The original use of a factor in evolution by no means sets a value upon its final use. Herbert Spencer rightly showed that it was no valid argument against his theory that the belief in immortality originated in dreams and reflections in streams to say that this origin invalidated the real doctrine of immortality to-day. We must distinguish between origins and final uses. It would be as egregious a mistake to say that because consciousness is primarily practical therefore it is not theoretical, as to say, with Plato, that the ideas toward which the world is moving are the cause of the world. The former substitutes origin for end, the latter the end for the origin. We must read the future by the past, but in a genuinely developing world we must not limit the future to the past. All of which is intended to say, with correct implication, that from the biological point of view consciousness is primarily one of the coöperant agents of the organism for its own well-being in its world.

(3) Education is a Utility.

In the third place, education is a utility. This is what biology has to say; other sciences will have other things to say in addition. Education forms good habits, that is, regular and serviceable reactions

[1] James, "Talks to Teachers," p. 24.

on life's stimuli. One acts differently as the outcome of his education. Education is an extra increment of power in the individual in his effort to conquer his world.

(4) Education is through Self-expression.

Finally, and most practical of all, biology is totally against the doctrine of receptivity in the organism, the child, as the process of educating. In the same world different organisms have come to exist, and specimens of the same kind of organism differ in themselves, and all because these individuals reacted differently to their identical general environment; because they were not fashioned simply by their surroundings, but also by their selection of their surroundings, and their reaction to them. Education comes through what the child does, and says, and thinks, and feels in the presence of the environment which the teacher supplies. The teacher teaches the child; the child educates himself. In being taught the child is passive; in being educated, he is active. In the school these processes are practically synchronous. The thing to be stressed is that teachers educate more, even if to gain the time necessary for it they have to teach less. Education is self-expression, not impression alone. Every impression made by teachers upon pupils should be followed by expression in some fashion from the pupils. In this way education becomes inwrought in the nervous system, and is not simply content of consciousness. Teachers who are students of the history of education will find justification for this pedagogic principle in certain of their own writers, particularly Froebel. Its growing recognition to-day finds witness in more understanding

and less verbal memory; in more written work in the form of note-books, drawings, plans, and maps; in measurements and laboratory experiments; in the kindergarten; in methods of self-expression in wood and metal through the physical and mental discipline of manual training schools; and, finally, in the development of the powers of independent thinking and original criticism.

This is what biology has to say, so far as we have been able to interpret its message, on the theory, and, secondarily, on the practice, of education. During the discussion we have followed Spencer in insisting that life is not simply protoplasm, but also adjustment. But it remains now to insist also that life is protoplasm which takes form, among other ways, in the human body. And this body, as an integral element of the individual to be educated, and its rights, have to be considered. This constitutes the physiological aspect of education, to which we now come.

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CHAPTER III

THE PHYSIOLOGICAL ASPECT OF EDUCATION

The Place of the Body in Education.

THE biological aspect of education has emphasized the importance of that kind of education which puts one in touch with the real conditions of life. It has emphasized the importance of the brain as the central office of the nervous system, as the agent of adjustment of the organism to its surroundings. We have now to inquire more intimately concerning the nature of the being to be educated, in whose adjustment to life consists his education. For our purpose the rough working division of the individual into body, as the physical expression of his life, and mind is sufficient. Such a division at the present moment in the discussion is not intended to close in advance the metaphysical inquiry whether ultimately body should not be read in terms of mind as against the materialists who maintain that mind is but the body in an attenuated and etherealized condition. Without attempting to solve this dark difficulty, the discussion of which would be irrelevant here, it is intelligible to say that the child to be educated has a body and a mind. In this respect he is like the everyday reality of life untransformed by metaphysical insight, viz., matter and mind. In extending further our conception of education, let us begin with the education of the body, rather than of the mind.

The reason for this order in the discussion is that life itself is first physical and then mental. The highest powers of mind are the last addition in the development of organic forms. The history of nature seems to reveal in succession the inanimate world; then the plant world with powers of nutrition and generation; then the animate world with additional powers of sensation, consciousness, and movement, such as the lower animals have; then, finally, the human world, with powers of self-consciousness, thought, æsthetic emotion, and choice. Such the order of creation seems to be. In this development nothing valuable of the earlier stages is lost in the later. The earlier stages of development are *aufgehoben*, as Hegel would say, in the later stages. Thus man, the last in the list of developed beings, is material and animal, as well as human and divine. His body is live matter, possessing still, however, the property of inertia to challenge his effort. Like the plant, it demands nutrition. It also contains a nervous system which allies man to the animals, which crudely differentiates him from the plant world, and which makes sensation and movement possible. Out of sensation and movement develop the highest mental powers of abstract thought and voluntary action. Care must be taken to avoid sharp lines of distinction between the roughly marked stages of this growth. Final distinctions between the inanimate and the animate, the plant and the animal, the lower animal and man, are difficult, if not impossible, to discover. To the scientist as well as to the philosopher existence is a unity.

Thus the physical is the foundation of all life, mental included, and in considering physical education before mental education, we seem to be following nature's own leading, and to be putting the education of the body into the basic place that is its due. The mind does not live in the body, as its "clay cottage," in Locke's phrase, but rather grows in the body as a plant in its soil. A poor soil means arrested growth, while a good soil conditions full fruition.

The Three Questions concerning Education of the Body.

There are three questions concerning physical education which confront us: first, How does the body influence the mind? second, What consequent attention should it receive? and third, What attention is it receiving in our educational system to-day?

The Influence of the Body on the Mind.

First, the influence of the body on the mind. The fact of such influence is unquestionable. Common experience shows that a tired brain means a slow mind; that a rested brain means a quick mind; that a brain artificially stimulated with alcohol, hashish, and like stimulants means temporary brilliancy; that a brain deadened with narcotics means mental inactivity; that a brain improperly nourished by the blood, as in fever, means delirium; and that a brain whose organic functioning is destroyed means insanity. In the preceding chapter the scientific evidence that the brain is the organ of the mind has already been reviewed.

How the Influence of Body on Mind is Effected.

The question arises as to how this influence is effected. In brief, it is by means of the central nervous system. Here body and mind come into closest intimacy, and through this means the body most influences the mind. The composition of the

nervous system is simple in outline, and intricate in detail. It consists, first, of nerve centres in the skull and backbone, the brain and the spinal cord, as they are called, and, second, nerves connecting these centres with the sense organs of the body and with the muscles. The nerves connecting the centres with the sense organs are capable of being acted upon by physical stimuli, such as air and ether vibrations, touch, pressure, effluvia, in short, by motion, and are further capable of transmitting these stimuli to the brain; hence they are called afferent or centripetal nerve fibres. Such a stimulus transmitted to the brain corresponds to a sensation in the mind, as when we see light or color, or hear sound, or touch a rough surface. Since they thus make sensations possible, the afferent nerve fibres are also called sensory. The nerves that connect the centres with the muscles cause them to contract, and so make movement possible. Carrying impulses out from the centres, they are called efferent, or centrifugal nerve fibres, and since they make movement possible, they are also called motor. Sometimes a nerve may contain both sensory and motor fibres. The nerve centres are gray in color, and are composed of masses of minute cells. Where the sensory nerve fibres enter the spinal cord and brain are the so-called sensory centres, and the portions of the spinal cord and brain immediately connected with the motor nerves are the so-called motor centres. The various portions of the centres are mutually connected by nerve fibres.

The prime function of the nerve centres is the transformation of sensory stimuli into motor im-

pulses. One steps on the root of a tree, it remains; on the foot of a man, it is withdrawn. It is the man's nervous system that makes the sensation and the movement possible. From these two, sensation and movement, develop all the final powers of consciousness. Sensation interpreted becomes knowledge, movement directed becomes will, the activity involved in each of these giving a tone of feeling to consciousness.

Such, in briefest outline, is the nature of the central nervous system through which bodily influences reach the mind, and the training of which, along with the muscles, constitutes physical education. As a telephone system makes a city a compact unit, so the nervous system unites the body into one organic whole, with the brain the central office. "Viewed broadly, the brain is a mass of white matter, with nuclei of gray matter deeply imbedded in it, and with a sheet of gray matter, about one-fifth of a square metre in area, and between two and three millimetres thick, covering the folds, fissures, and convolutions of its surface."[1] All appeals to the mind, educational and otherwise, must be made through the agency of the nervous system. The senses on the one hand and the muscles on the other are the two first gateways through which educational influences must proceed. The educator who would climb up into the mind by some other way is unaware of the nature of the child with whom he has to deal. The training of the senses and the doing of things well that require delicacy of

[1] Waller, "Human Physiology," p. 518. Quoted by Stout, "Manual of Psychology," p. 35.

muscular adjustment are the two beginnings of physical education, and only a sound physical education can support a sound mental education.

The Physiology of Habit.

In speaking of the nervous system, then, as underlying conscious processes, we must not let the opportunity pass to explain the physiology of the formation of habit, which, as biology has taught us, plays so essential a part in all education. Motor impulses, or action, are either involuntary or voluntary, that is, are due to impulses undeliberated upon, or to ideas clearly viewed and exclusively attended to. We involuntarily withdraw our hands from a hot stove; we voluntarily get some remedy for the burn. The lower nerve centres, located mainly in the spinal cord, are responsible for the involuntary, the reflex, and the instinctive acts; and the higher nerve centres, located in the brain, are responsible for the voluntary acts. The highest mental processes, such as hesitation, deliberation, choice, reason, and the like, centre perhaps in the covering of the cerebrum, called the cortex. The circuit of a stimulus from the external world leading to an involuntary act, for example, the stimulus of contact with a hot stove, which circuit would represent the sensory and motor processes in the lower nerve centres, would be as follows: first, the sense organ of touch, located in the skin, would receive the stimulus of contact and then an afferent nerve fibre would take the stimulus to a spinal sensory cell; whence a connecting fibre would take it to a spinal motor-cell, where it would be transformed from sensory stimulus to motor impulse; and an efferent nerve fibre would carry the impulse out to the muscle,

causing its contraction and removal from the stove, — all of which would have transpired in not more than one-tenth of a second.

The circuit is much longer in the case of voluntary actions, requiring the use of the higher as well as lower nerve centres, and involving in succession the stimulation of the sense organ, the transfer of the stimulus by an afferent nerve fibre to a spinal sensory cell; then its conveyance by an afferent nerve tract to a cortical sensory cell; then its passage through a connecting fibre to a cortical motor cell, during which process decisions are reached; thence an efferent nerve tract conveys the motor impulse to a spinal motor cell; and finally an efferent nerve fibre takes it to the muscle, and directed action ensues. The action may have been sicklied o'er by the pale cast of thought any length of time, or it may have been abbreviated into one-fifth of a second.

Now, all habits consist in turning over to the lower centres alone stimuli that once required the higher centres for their reaction. And from this physiological point of view, the whole of education, from the alphabet through philosophy, is but equipping a man's nervous system for proper and best habitual reactions on stimuli. Systematic thinking, æsthetic appreciation of nature and life, and the virtues become constituent elements of the man's physical being as well as being mental characteristics. And the education which is bad is as firmly supported by the plastic nervous system as that which is good.

Psychosis and Neurosis.

Our question was, How does the body influence the mind? We have seen it is through the nervous sys-

tem, and we are now prepared to give a still more specific answer. It is only when nervous energy is operative in the higher brain centres that the mind has any content at all, that the mind is at all aware of itself. Not all nervous action is accompanied by consciousness. Most of that in the lower centres is not, but all consciousness is accompanied by nervous action. In the far-sounding phrase of the modern physiologists, "no psychosis without neurosis." Mental activity is accompanied by brain activity. Consciousness, as we know it in our present mode of existence, manifests itself only as the correlate of a nervous system. This stone, which the anti-materialists began by rejecting, has become the head of the corner as the working hypothesis of modern physiological psychology.[1] It is also the basis for any conception of the fundamental place of the body in any general plan of education. The body is the home of the mind, in the forceful New Testament phrase, "the temple of the Holy Ghost."

It may even be claimed with scientific credibility that not simply the normal consciousness is the correspondent of cerebration, but those abnormal manifestations of consciousness, such as hypnotism, dual personalities, trances, subconsciousness, the subliminal self, and insanities, are the accompaniments of definable changes in the nervous system.

The Degree of Mental Efficiency.

Since mental activity is dependent upon nervous activity in the brain, it is evident that the degree of one's mental efficiency at any given time will depend upon two things: first, the state of the brain itself;

[1] Cf. Professor James, "Briefer Psychology," pp. 5–6.

and second, the state of the physical body of which the brain is an organic part. Considering first the state of the brain as influencing mental activity, it is noticeable that the brain is most ready for the mind's work after sound sleep, during which uninterrupted repair, without waste, has been going on. The nervous energy that mental activity consumes by setting free certain organic compounds in the brain substance, is replenished through the blood supply, bringing in nutrition and oxygen to the brain. "The brain may be likened to an engine which can do its work only when fuel is supplied and refuse removed." [1] Fuel is supplied through pure blood, fresh air, and good food. Lighter kinds of physical exercise likewise repair brain tissue through the rest afforded. The brain is least ready for work after continuous application for two or three hours. The brain energy of children is less than that of adults, which accounts for the natural flagging of their attention after not more than twenty minutes of concentrated effort. Heavy mental work demands more frequent and longer rest than light, because with light mental work the processes that repair the brain almost keep pace with those that deplete it. In general the quantity of brain energy at command corresponds with the physical energy of youth, maturity, and old age.

Considering, in the second place, the state of the body of which the brain is a part, as influencing mental activity, it is to be noticed that the body is an organism, an assemblage of parts, each one of which

[1] Sully, "Teacher's Handbook of Psychology," p. 33.

in relation to the others is both means and end. When the muscles of the body are fatigued, the brain power is less. The harder kinds of physical exercise temporarily unfit for mental work by absorbing the present vital energy of the system. Students who play football keep awake with difficulty over their books at night. Farmers go to sleep reading newspapers. If the digestive processes are very active, as after a hearty meal, the blood is drawn from the brain and used to digest the food, hence the mind is less active and heaviness is natural. A body in distress from cold, heat, or hunger makes mental action less efficient. In ill health the mind is slower in movement, and good health conditions the alertest states of mind. The quantity of nervous energy is on the ebb from morning till the middle of the afternoon, when the tide turns again.

These are the facts that show the influence of the body on the mind, and prepare the way for the answer to the second question, namely, What consequent attention should the body receive in educational endeavors?

Before passing to this phase of the subject, there are two matters that have naturally occurred, doubtless, to the mind of the reader that are associated with, but not relevant to, the immediate discussion in hand. The first is the obscure problem in physiological psychology, as to just what the ultimate connection is between nervous energy being set free in the brain and the processes in consciousness. Here one may read to advantage a recent admirable summary of the positions that are held.[1]

[1] Stout, "Manual of Psychology," Introduction, Chap. III.

The second matter is the simple converse of the question we have been considering, viz., How does the mind influence the body? The unity which exists in the individual composed of mind and body should show itself in this way also. In brief, there are three ways in which this influence discovers itself to our common thinking. First, mental states, such as grief, anxiety, fear, dread, depression, prevent the normal functioning of the organs of the body, such as digestion. These states, indeed, are partly physical in origin, if not, as Professor James holds, wholly so. Opposite mental states, like excitement, exhilaration, may accelerate the normal functioning. The body reverberates, as it were, with unusual states of consciousness. Thus it appears that functional disorders, like insomnia, but not organic disorders, like cancer, can be caused or cured by mental influence on the body. Again, mental activity uses up nervous energy, which has to be replenished; and finally, in all selected action the body is the servant of the mind. The body acts in response to those ideas which are uppermost in consciousness, or which exclusively occupy its focus to the inhibition of contradictory ideas.

The Influence of Mind on Body.

Let us pass from these related but not pertinent points to our second question, viz., Seeing the influence of the body through the brain on the mind, what consequent attention should the brain and body receive in order to fullest mental efficiency? What has already been said shows at once the necessity for a fount of pure blood supply, of air with oxygen in it, and of sleep and recreation. Further, it is to be

The Attention the Body should receive.

Mental Work.

noted that exercise of the brain is normal and, indeed, necessary to its growth. It is as natural to work when we have rested as to rest when we have worked. Teaching children is not an artificial, but a natural, stimulus to the growth of their brain. So long as the brain's power is not over-taxed, teaching is not, and should not be considered, a severe artifice by either teacher or pupil. The body itself is healthier when the brain is being exercised in moderation. Rest for the brain is not so much the cessation of mental activity, which is impossible during waking consciousness, as its diminution or change, as in absorbing games.

Brain Rest.

While stressing mental work as good for brain development, it is important to recognize the physiological fact that brains can be over-taxed, resulting in temporary, if not permanent, suspension of mental work. Fatigue is the first symptom. The attention wanders, the expenditure of nervous energy is greater than the supply. He has already worked too long who has to whip himself to further work. After fatigue, headache is the next symptom, and continuous over-work without periods of recuperation means certain nervous breakdown. The dangers from overstrain are greatest during the period of most rapid growth, during which time the developing body demands most of the nutrition. If the brain consumes it, the body suffers arrested development, and so involves ultimately undesirable results both to brain and mind. Precocious children need to be restrained rather than pushed. Real greatness cannot exist before adolescence. The teacher can never afford to

forget that the youngest life is mainly nutritive, that boys and girls are concerned primarily with sensations and movements, that only young men and maidens are approaching fulness of brain power, and that at all times our store of mental energy is not unlimited. The teacher should become generally informed of the brain capacity of individual pupils by observing their real powers of attention, and see that no child is over-taxed, that no willing child over-exerts himself, and that the capable indolent child is stimulated. The average child among the younger pupils in American public schools is beyond doubt being over-worked. The enriching of the curriculum, the nervousness attending examinations, the rigidity of promotions, the general ignorance of the amount of brain work a growing child ought to do, all are menaces to the physical well-being of growing school children. The students of child nature say that a seven-year-old child should not study over two hours a day, a nine-year-old may study three hours, a twelve-year-old four. Herbert Spencer sounded the tocsin of war a generation ago against our inattention to the wants of the body in his famous chapter on Physical Education, showing that children are under-fed, not well clothed, and over-worked.

Respect for the Limits of Brain Capacity.

With growth of the brain during the school period goes growth in the intellectual and moral powers, and the considerate teacher will limit the demands made upon the child to its present brain capacity. During the kindergarten period, indeed from the years one to seven, the dominant conscious life is that of sensation and movement; during the period of the elementary

schools, from the years seven to fourteen, the dominant conscious life is that of the imagination, memory, and that kind of understanding which likes to perceive relationships between things; during the secondary school period, from the years fourteen to eighteen, the mind begins to see the relativity of all things to all things through the use of the reason; and in the college period, from the years eighteen to twenty-two, the powers of reason are perfected in some kind of single vision of truth and reality. Without this finally reached real world-view, the end of a liberal education has not been completely attained. Demands made by teachers upon pupils should be limited to their present brain and mental development, as indicated by the appearance of these increasing powers of consciousness during the school career. Methods of instruction should just keep pace with mental growth, and neither forge ahead nor lag behind.

Suggestions for Brain Rest.

To avoid over-taxing the brain, frequent rests, recesses, short recitations, and changes of brain exercise are to be recommended. The description of the nervous system showed us that the brain centres of sensation are not those of movement; then for rest for the brain let intellectual work and free movements about the room relieve each other. Even is it true that different centres of the brain are exercised by different subjects of study; the subjects appealing to the sense of sight, or object lessons, may well be relieved by those appealing to the ear, like music; while those requiring thought, like mathematics and language, may profitably be followed by those requiring movements as well as thought, like drawing.

The first intimation to the teacher that the pupil needs rest is fatigue.[1] The appearance of fatigue indicates three things, viz., that nervous energy is being utilized more rapidly than produced, that there is local waste in the parts mainly active, and that there is a general clogging of cells and tissues. The first of these three elements is most vital. Concerning the causes of fatigue, the first and obvious one, of course, is long-continued work. Apart from this, the teacher himself, as tests actually show, is the most responsible factor either in producing or in delaying the appearance of fatigue. Thirdly, of the causes, certain school subjects are in themselves fatiguing, such as gymnastics, mathematics, and foreign languages, mentioned from the first in fatiguing power. Certain other school subjects are recuperative, such as drawing, singing, mother-tongue, history, geography, and, perhaps, natural science, arranged in a descending scale. For brain rest school programmes should alternate the fatiguing and recuperative subjects.

Study of the Physical Child.

The physical nature of school children is a fact to be observed and considered. It was largely disregarded until the problems of modern city schools, such as warming and ventilating, elevated the importance of the question to that of first rank. Both the problem and the way of getting at its solution, together with admirable practical hints concerning the physical peculiarities of children, are delightfully set forth in Dr. Rowe's recent discussion.[2] To convince

[1] Consult Sadler, "Reports," Vol. IX, p. 527 and ff.

[2] "The Physical Nature of the Child."

us of our inattention to this problem, he calls upon teachers to answer off-hand such questions as these:

"Can all the children see all the blackboard? Are any straining their eyes by holding their books at an improper distance? Are any partially deaf? Are the slow ones incapable or diseased or lazy? Do they sit and stand correctly? Should the same degree of precision be expected from all? What are the causes of paleness? Do the children know the principles of hygiene essential for health? Are disposition and temperament considered? What work is done by each pupil out of school? and what kind? Do they exercise enough? Which ones have defects in the vocal organs, and what attention do these receive?"

Teachers will find their higher problems easier in proportion as they are successful in solving these lower and basic ones.

These things, then, indicate what attention the body and brain should receive in educational ways. Physical education, meaning proper attention to the body and the brain, is necessary both in itself and because it makes a sound mind possible. Spencer quotes a suggestive writer as saying, "The first requisite to success in life is 'to be a good animal.'" Certain it is that the ages of asceticism, of scorn for the body and its natural impulses, are the unstriking ones in the progress of civilization. And Juvenal's famous phrase, *mens sana in corpore sano*, is adopted by Locke and other moderns as containing a lasting principle.

The Attention the Body is receiving.

Having considered the influence of the body on the mind, and the attention it consequently should receive, it is proper now to turn to our third question,

and ask, What are the agencies in our schools to-day that make for physical education? These are four, viz., manual training, play, gymnastics, and athletics. Let us consider these in succession.

Manual training stands for other things, as we shall see, than physical education, but it stands for this, too. That which furnishes opportunity for self-expression is that which educates. Manual training is an opportunity for self-expression in material forms. Many boys find themselves in wood and metal and clay when not in books, and the training of the hand thus secured is also a training of the brain and of the mind. The hand, indeed, is the mind's greatest executive. Manual training stands for a specialized form of that sensory and motor training which we saw underlies and conditions the finest fruits of mental culture. Among its immediate results may be noted a coördination of mind and hand; an extra ability in the material execution of ideas; a removal of awkwardness; the formation of mental and moral habits of accuracy, precision, and honesty; and a realization of the dignity of labor. The basis of civilization is and must ever remain the material, and it is an educational effect of no small significance or value to be in sympathetic touch with the working world. Manual Training.

In the curriculum manual training furnishes needed change from mental to physical employment, counterbalances the emphasis laid upon intellectual development, proceeds in method from the simple through the complex to the unit, and makes education more practical. It is a part of the new educational en-

deavor, to make the body a readier and more delicate servant of the mind and to make all arts artistic, in accord with the new movement in industry of beautifying the common. Its mission is not to supplant, but to supplement the older mental disciplines. The best educational results will be obtained when the pupil's attention is bent on the character of his work, rather than on the proceeds from its sale.

Rousseau, foreseeing the French Revolution, advocated the learning of a trade by every boy, that when upheavals came in society he might be independent. So Émile was a cabinet-maker. To-day the purpose of manual training is, on the other hand, primarily educational, rather than utilitarian. In the Elmira Reformatory it plays a prominent part in the corrective discipline of the institution. Actually to-day manual training has its place mainly in the secondary schools in the educational system. It is desirable here, particularly for those intending to make some form of mechanics a profession; but for the best educational results, its real place is in the grammar grades, from the years seven to fourteen, while the development of the brain is most rapidly progressing.

Play.

Second, play. The recognition of the service of play in education and in life is, omitting the Greeks, modern. Froebel ("Education of Man," 1826) has done most in establishing its educational value, and Groos in interpreting its real significance. We shall have to consider the nature of play, its explanation, and its function in education.

The Nature of Play.

Play stands in contrast with work. The subjection of the individual to the demands that the environ-

ment makes on him is work. The spontaneous physical expression of individuality is play. Work is always for some ulterior end to be attained; play is always for its own sake. Work may or may not be agreeable; play is always pleasant. Work is serious; play is light. In work the universal self dominates; in play, the particular private self. In the philosophical language of Dr. Harris, "In work the individual surrenders himself to the service of a universal want or necessity of society, which has created a vocation or calling. Man gives up his particular, special likes and desires in work. He sacrifices ease and momentary convenience for rational (universal) ends. He adopts the social order. In play, on the other hand, he gives full rein to the individual whim or caprice. In play his activity is wholly turned toward his own immediate gratification. After work, in which he sacrifices his private particular inclinations for society and for rational ends, comes play, in which he returns to his individuality and relaxes this tension of work. He regains his feeling of self in play, because in play immediate inclination alone guides his activity, and thus the particular self is the impelling principle, and also the immediate object of it."[1]

Play is the method the individual takes in preserving himself and his freedom. It protects him from the loss of himself in his labor. It keeps the springs of personal being ever fresh and flowing. A holiday reveals and gratifies a pupil's interests, or a man's, as a work-day does not. That man has worked too long who no longer can enjoy a holiday. He is

[1] Harris, "Psychologic Foundations of Education," p. 283.

no longer the master of his work, but has become its servant.

The Explanation of Play.

The explanation of play is not so easy to find as its nature. Any theory that aims to be adequate must account for the following facts, viz., that most animals play; that each kind of animal has its own list of plays; that they play instinctively and do not have to be taught, though some games are learned by imitation; and that there is an element of "make-believe" in play, as when the dog pretends to be biting the master's hand, or the children "play house." The theories that would explain play are many; the main ones are three.

The surplus-energy theory maintains that play is a vent for superfluous vitality. This theory is associated with the names of Schiller in Germany and Spencer in England. There is an element of truth in it. For example, children play when they need no recreation, and athletics drains an institution of exuberant animal spirits which otherwise might flow in bad channels. But this theory does not contain the full truth, for children and animals and men play when they have no superfluous energy, as in some of the rhythmic games of children. And why should the different kinds of animals have instinctively different plays? And we should expect, further, that so widespread a phenomenon as play had some deeper significance in the process of evolution than this negative function of an exhaust drain.

The recreation theory maintains that play is for the relaxation and recreation of exhausted powers. It is associated with the name of Lazarus in Germany.

The tightened strings of the instrument must be loosened. It is true that the same game may furnish both relaxation and recreation, as tennis lets loose the motor energies penned up in study and tones up the brain's power for work. Play does recreate, but there is not always need of recreation when there is play.

The practice theory, associated with the name of Groos in Germany and Baldwin in America, maintains that play is preparatory to the tasks of life. "In child's play opportunity is given to the animal, through the exercise of inborn dispositions, to strengthen and increase his inheritance in the acquisition of adaptations to his complicated environment, — an achievement which would be unattainable by mere mechanical instinct alone. The fact that youth is, *par excellence*, the period of play, is in thorough harmony with this theory." [1] Or, more briefly, "Play is the agency employed to develop crude powers and prepare them for life's uses." [2] Or, as Baldwin expresses it, plays "exercise the young animals in the very activities, though in a playful manner, in which they must seriously engage later on in life." [3] Thus, youthful play is nature's way of preparation for later serious living. The kitten's ball is the old cat's mouse. The little mountain goat on the plains in play still jumps up and down, while the fawn whose later life is to be on the plains, jumps straightaway distances. The girl's doll and the boy's soldier and horses are premonitory. The main education of early

[1] Karl Groos, "The Play of Man," p. 2.
[2] *Ibid.*, p. 375.
[3] "The Story of the Mind," p. 48.

life comes to the child through play. It is nature's schooling and should be supplemented, not interfered with, by man's schooling.

The Function of Play.

The function that play performs in education is but a part of what it does in life. Nations play as well as individuals, and their games and festivals discover deep-lying national interests. Dr. Harris has shown that the Greek games at Olympia are a revelation of the Greek devotion to beauty of the physical body; that the Roman gladiatorial contests display the sacrifice of the individual to the good or the pleasure of Rome, upon which principle the empire was founded; that the Mardi Gras in America displays the American idea of the equality of all men and the vanity of insignia; but that plays are not so prominent in America because our very form of government permits that freedom to the individual which play is designed to secure.

Play also explains art. All art is due to the play of the productive imagination. Here the play is of the mind and no longer of the body. Groos calls artistic enjoyment "that highest and most valuable form of adult play." Art is conscious self-illusion, — we surrender to the picture, the story, or the statue, as though it were real. Art thus goes back to the "make-believe" consciousness present in so much play.

In the school the place of play is fundamental beside work. It affords the necessary reaction from work and preserves the individuality of the pupil. It, and not calisthenics, is the true rest from work. Without it, a return to work with zest is impossible.

Its educational effects in the way of unintended preparation for later living is incalculable. This is particularly true in England, where play may be said to be a national institution. Play justifies the recess, which should bring a change of scene and air, and which is a valuable example of what Rousseau would call the noble art of losing time. Play explains many student pranks against each other, the faculty, and the town. Much mischief is not serious at all, but only the pupil's natural and individualistic reaction to school restraints. Such frivolous infringements of school order should be carefully distinguished from serious attacks upon it, when it is a question of management. The demand for pleasure, so natural and strong in children, and so forcefully declared by Luther, is met by play in the school, furnishing, as it does, opportunity for the pupil to follow his own bent.

But as the school must not work at play, so must it be said that it must not play at work. To do everything playfully is to remain a child. The school must teach the child to do his duty, even if it is against his inclination. Nor must children be deceived into working under the guise of play, which confusedly mixes opposite elements in life. Yet the work, as work, may be made so attractive that they will love to do it. Indeed, the highest and noblest kind of work has this element of play in it, this element of joy in the activity for its own sake. Play in work is very different from play at work. Hence it is not desirable to have the school run on the sense of duty alone. The work itself should be so compelling in

interest that it is freely willed, and that the element of drudgery is largely lacking. That school is a prison-house where the stern mistress of law alone rules unenlivened by the perfect law of liberty.

A last service of the impulse of play in the school is that of socializing the individual, developing disinterestedness through the performance of something for its own sake, and cultivating the moral personality in games that at any rate must be played fair. The very aim of developing freedom of the personal spirit is thwarted where teachers are officious in the pupils' games.

As indicated at the outset, Froebel and the kindergartners are the true educational interpreters of play as one of the child's highest modes of self-expression. "We should not consider play as a frivolous thing," says Froebel; "on the contrary, it is a thing of profound significance. . . . By means of play the child expands in joy as the flower expands when it proceeds from the bud; for joy is the soul of all the actions of that age." In fact, in the kindergarten play is converted into systematic teaching, skilfully suggesting as it does aims of action and objects of study. The kindergarten is supervised play; in it the community sense is developed; children of the same age playing and working together here develop unselfishness and their social natures in a way impossible in the home with children of different ages and the youngest the object of central interest. With its basic principle of self-development through self-activity, the kindergarten is particularly serviceable to that type of child which is naturally timid, undemonstrative, and inac-

tive. As children outgrow the kindergarten, the work impulse must appear increasingly prominent. Play remains, but not as the sole spring of action. The community life of the kindergarten is a true basis of all later education. The practically uniform report is that children who grow through the play of the kindergarten do better the work of the grammar grades.

The discussion of play as a factor in physical education illustrates how arbitrary are our distinctions of education into physical and mental. Education is really one, and physical education is an aspect of the whole, and not an entity, but an abstraction, in itself. As Schiller says, "a man is fully human only when he plays"; so it can be said that a man is fully educated only when his body is developed, yet his body cannot be developed without touching his mind at many points. Certainly play brings out the bodily powers, and perhaps dominantly does so, but its influence is coterminous with education itself.

Sometimes the needed physical exercise that play naturally gives has to be artificially secured by conscious direction, in which case we have gymnastics, the third element of physical education in our schools to-day.

Third, gymnastics. As Herbert Spencer says, gymnastics is "factitious exercise," it is consciously directed physical exercise. The element of spontaneity and freedom is less than in play, gymnastics requiring a mental strain and the exercise of will power. Mechanical gymnastics is inferior to play, being more fatiguing and less interesting. Play has the invigoration that always accompanies the agree- Gymnastics.

able. Spirited gymnastics, however, is superior to play for physical development, because of the attention given to all parts of the body. Spencer shows, however, that play also provides evenly distributed exercise of the body. Gymnastics is decidedly not an end in itself, but a means to an end; the purpose being not to make gymnasts, but strong physical men. It should be particularly directed toward developing weak points and correcting any physical defects of the body, requiring as it does special physical apparatus. Gymnastics of a simple kind is especially valuable for girls, necessitating proper modes of clothing, securing to the body its natural strength, and giving poise to body and mind. No one thing is more encouraging for the future physical welfare of Americans than the present large and growing interest on the part of our young women in all kinds of indoor and outdoor bodily exercise. While the home is still their peculiar sphere, the house is no longer their prison.

The direct aim of all artificial physical exercise is the reaching and the keeping of the normal size and strength of the main tissues, the acquiring of correct and economical habits of nervous and muscular activity, the development of the motor areas of the brain, and the giving of the mind powers of easy direction over the body. Through the right kind of physical culture the nerve centres are organized and the body becomes what it should be, — the ready and accurate expression of the mind, the material that manifests the mental. Culture of the body aims to make it the fit bearer of a cultured mind. The tangible re-

sults of gymnastic exercise during the period of plasticity are increased weight and height and strength. Gymnastics is a good supplementary agency to play in physical education, and should be required in the educational system, at least through the adolescent or secondary school period, if not the first part of the time in college, of all students not regularly engaged in other forms of bodily exercise, as athletics. This brings us to a consideration of the last regular mode of physical education, which, like the trust in the political world, is a contemporary problem, and necessitates regulation.

Athletics.

Fourth, athletics. In the beginning it is to be observed that athletics has been the cause of a general alarm out of all proportion to its danger or its importance in education. Athletics has been, and is in no immediate danger of becoming other than a simple and natural by-play in the course of American education. The vexed fretting at its presence, the conspicuous place it occupies in the illustrated and unillustrated press, the printing of cuts of boys and unremarkable players, all serve to magnify unduly its importance, and to give it a place in the public eye out of all proportion to the place it really occupies in our educational institutions.

Athletics is playing to win. There is the general consciousness, however, that it is better to lose fairly than to win unfairly. The fact that a fairly won victory over a worthy rival is the goal, is the secret of the life of athletics. The success here is unqualified; the game is lost or won. There is a square estimate of comparative strength, with a clear and

irrevocable decision. Usually, life provides us with qualified successes or partial defeats. In athletics the victory and defeat are each absolute. This finality about the result explains both the animus for the game and the feelings accompanying the outcome. Athletics introduces the element of emulation in games. It differs from gymnastics in that the latter is mainly for the individual, with health in view; while athletics is mainly for teams, with victory in view. This associated play gains in attractiveness over the isolated. In athletics, again, as differing from gymnastics, one specializes in his position, and exerts himself beyond what is necessary for physical exercise.

The development of athletics into national prominence is a matter of one generation. Before the Civil War college athletics consisted in rowdyism, playing practical jokes on the faculty, attending cock-fights, engaging in disreputable prize-fights, and sometimes in untrained boat-racing. To-day a big intercollegiate athletic contest means a multitude of spectators and the expenditure of a fortune of money. Harvard's athletics for the season of 1900–1901 netted nearly $40,000, being an increase of about $12,500 over the preceding year, the total receipts of the year being over $117,000. For some, though less than a majority, of college students, athletic sports occupy a competing place with scholarship on the one hand, and with social intercourse on the other. What is to be our attitude toward the part that athletics plays in physical education?

Actually the attitude is now one of disapproval, or of approval, or of suspended judgment. The number

composing the last is considerable. Those who disapprove of modern athletics urge, in summary, four objections, viz., it provides exercise for the few while the many look on, it carries the idea of amusement to excess in the serious work of getting an education, it discourages scholarship, and it disturbs morals. There are grounds, and often too good grounds, for these objections; but those who make them must bear in mind the considerable replies made by those who favor athletics. The many who sit on the bleachers smoking, or lie idling around, really have recourse to, and to some extent use, gymnastics, play, and out-of-door hours for exercise. Further, a careful computation of the men in the average college who at some time in their course have undergone training for some team will actually show about fifty per cent. At Harvard the percentage of players is larger. President Eliot writes, "It is reasonable to suppose that at least two thousand students out of the thirty-five hundred in Cambridge take some active part in one or more of the thirteen sports in which an enumeration of the number of participants was made."[1] These facts indicate that athletic sports benefit decidedly more than the few they are given credit for.

The second objection, that athletic contests provide excessive amusement, that the time and attention devoted to this kind of entertainment is out of proportion to its relative value in life, is considerable. The physical, though valuable beyond estimate, is indeed not the most valuable thing in life, and that

[1] Reports of the President and Treasurer of Harvard College, 1901–1902, p. 41.

youthful student's interest which is centred primarily in athletic contests is certainly misplaced. And recent investigations tend to show that the college athlete attains a distinction in life slightly below the average of his class.[1] Yet one wonders if, as a nation, the American people have enough play in their life. Is not the world still too much with us, with its busy and ponderous pursuits overwhelming individuality? The world of matter and of commerce might certainly become less wearing on our nervous mechanism were the play element introduced more largely into our society through the infusion of an element trained to appreciate its real place in life. The small Greek nation, as a whole, once in four years celebrated athletic contests, under which the arts of poetry, of sculpture, and of religion flourished. The original of the Apollo is not that god, but some oily Greek youth on the sandy plains under the shadow of Olympus by the banks of the Alphæus. In America to-day the arts, due to play, are not keeping pace with the sciences, due to work. The busy American needs what Professor James calls "the gospel of relaxation," and athletics, duly placed among the educational influences, will forward this interest.

The third objection, that athletic games discourage scholarship, wants proof. It is true that these games consume vital energy that might be given to study; but it is doubtful if it would be, were there no athletics. It is also true that athletics furnishes an

[1] A. Lawrence Lowell: "College Rank and Distinction in Life." *Atlantic Monthly*, October, 1903.

interest often more compelling to participants than books; but it is doubtful if books would receive any larger attention from these particular men, were there no competing athletics. Time, it is true, is required for athletic sports; but only so much time under any conditions can be given to study. A few athletes are fine scholars, be it said, showing that the two things are not inherently contradictory. It is doubtless true that the scholarship of athletes falls but little more short, if any, of their ability than that of other students. On the whole, the conflict between the claims of scholarship and athletics is rather a matter for regulation than for the condemnation of athletics. It is easy to require athletes to maintain a certain standard of scholarship, and thus the problem is actually solved in certain institutions where otherwise it would be gravest. With the growing differentiation between the college and the university, it is necessary to recognize that the college student is not yet the scholar with specialized interests that he may become, but is just the universal man, with all the natural human interests weaving the web of his life. Before athletics came to occupy its present prominent place in education, the college student was supposed to be a monument of erudition, whose body shadowed forth in pallid face and attenuated figure his nights of groping for the light of knowledge. To-day, athletic contests, reenforced by other agencies as human, have transformed this college student into a college man of superb physical strength, of applicable mental furnishing, and with all the interests of real life at heart. Not since the days of universal Greeks has there

been such an illustration of the simply human as that shown by the college man to-day.

The fourth objection, that athletic sports demoralize, is partly true. The athletic record is stained by betting on the big games, by carousal often in celebration of great victories, and by the sacrifice of days to the prophecy and history of games from which recovery of interest in study is a slow and painful process. But this evil is not unmitigated. Another phase of the truth is that athletic interests advance morals. The student body has been taken out of itself and made to appreciate strength and courage and virility and skill as virtues, and a loyal disinterested devotion to one's institution has been developed. And the capacity for a disinterested devotion is an element in the highest success, service, and happiness in life.

The positive case for the maintenance of the present position of athletics as an agency of physical education may be briefly put from three points of view, the physical, the intellectual, and the moral. First, athletic contests develop physical strength, force, power, agility, dexterity, ease, grace, and swiftness. The record in after life of American football men and Oxford oars shows a vitality decidedly above the average. The fatalities in football have been advertised beyond their significance, occurring as they do mainly at the opening of the season and with unskilled players, though temporary injuries are numerous. The actual number of fatalities in football, the world over, is reported as less than in any other sport except tennis, skating, golf, and boxing. Second, athletics develop certain desirable intellectual qualities, such as

quickness, alertness, self-knowledge, and the ability to think in a crisis. Third, they develop the moral qualities of self-control, self-reliance, force, endurance, courage, the sense of the value of training, the discipline of defeat, if not humility in victory, the sense of the value of concerted action, nerve, practicality, and will power. Football, the most objectionable of athletic sports, is the prince of games in moral quality. Its team, which is an organized unit, is the finest training in associated effort.

Those who favor athletic amusements and are inclined to look into the future for some of the justifying effects which have followed in their wake in the past, point to the time when this devotion to the physical nature of man may generate another age of art, when to know and to reverence the physical frame of man will lead to its permanent and beautiful embodiment in fitting forms. As the lamented President Walker says in concluding his discussion on "College Athletics,"[1] "The vision of the Apollo may yet rise to the view of thousands out and up from the arena at Springfield, as erst it rose before the thronging multitudes of Olympia."

In summarizing our attitude of qualified approval toward athletics, the conclusion of President Eliot's discussion of this subject, mentioned above, must be quoted, "Such are some of the evils that attend the prevailing exaggeration of athletic sports; but whenever the evils consequent upon this exaggeration are mentioned, it should also be mentioned that the outdoor sports on the average and in the mass do more

[1] "Discussions in Education," p. 285.

good than harm; for they promote vigorous physical development, and provide invaluable safeguards against effeminacy and vice."[1]

Play, gymnastics, and athletics stand to each other in supplementary rather than contradictory relations. They take their turns in serving best the interests of physical education. During the period of infancy, say the first seven or eight years of life, the larger neuro-muscular combinations must be developed, and play performs this function. During the elementary period, say the second seven years of life, the finer neuro-muscular adjustments, unreached by play, and the all-round development of the physical system must be secured, for which gymnastics is peculiarly adapted. During the secondary and higher school periods specialization in physical training is in order, to which aim athletics lends itself. Of course these periods and their corresponding agencies for physical development overlap to some extent.

Because the pupil is a psycho-physical integer, these same agencies likewise best serve the interests of mental education when so arranged. There is a neat parallelism between what each agency in its period does for the body and what the mind educationally needs. Play occupies the mind with sensations and movements; gymnastics supports the idea of all-round development, the foundations of which are laid in the elementary school; athletics specialize physically as the higher school periods do mentally. Thus play, gymnastics, and athletics have places and values relatively to each other.

[1] "Discussions in Education," p. 41.

The Attention the Body has received in the Past.

This concludes the discussion of the actual agencies of physical education in the American school system of to-day. A brief glance at the history of physical education will serve to show the tortuous ascending and descending path by which it has come into its present substantial prominence, will put its present position in historic relief, and will guarantee to it no waning future.

In ancient Persia, under Cyrus the foremost nation of earth, the youth were educated by the state for the state in its military campaigns. The youth were trained in gymnastics and military tactics, and, next to moral rectitude, physical strength was held to be useful to men.

Among the Greeks, who perhaps borrowed certain of their ideas concerning physical training from the Persians, gymnastics received a development second to none, unless it be that of our own time. They excelled in combining play and physical exercise. The Spartan child, if ill-formed physically at birth, was exposed. As a youth he endured hardships of hunger and cold, in order to become an efficient soldier. The Spartan girls have the distinction of being the first women in the history of education to receive physical training. This included gymnastics, running, and jumping, and was intended to make them the mothers of hardy men. In advocating in his "Republic" similar physical training for girls and boys, Plato was influenced by the Spartan ideals.

In Athens, the gymnastic training took the direction of beauty, rather than strength, of body. The world has never elsewhere seen such devotion to

athletic contests as in the Isthmian and Olympic games. These were the occasion of Greece's largest assemblies, and by them they reckoned their chronology. The principal events were throwing the discus, running, jumping, wrestling, and chariot-racing. The laurel-crowned victor was a hero all his life, was carved into marble by a Phidias, written into verse by a Pindar, and honored by posterity as a god.

Rome, like Sparta, was more practical in its physical training and prepared for war. The Romans were the first to encourage professionalism in games, preferring for the most part personally to be lookers-on rather than participants. A Roman youth could throw the dart, ride, box, swim, and endure extremes of temperature. Juvenal's classic phrase, *mens sana in corpore sano*, is now become a commonplace.

With the first centuries of Christianity physical education went into a decline, though its roots were too deep-lying to be finally extirpated. The body was considered the prison-house of the soul, against whose bars of sin the soul beat and bruised itself in vain, struggling to be free. Man was a pilgrim to a heavenly home, and it was his vile body that was weighing him down and keeping him in bondage. Hence arose asceticism, a product of unearthliness, and inattention even to the natural needs of the body. St. Jerome, in writing to Læta concerning the education of her daughter, advised against bathing and long hours of sleep at night.

During the Middle Ages the sole exception to this general condemnation of the body was the physical education of the knight. The romantic institution

of chivalry preserved the natural play instinct, so long done violence to, in games and knightly contests. As he followed his liege lord the education of the young knight was both physical and military. He was trained in the so-called seven free arts of the castle, viz., to ride, swim, shoot with bow and arrow, box, hawk, play chess, and write poetry.

The modern thought about physical education was initiated in the sixteenth century by François Rabelais (1483–1553). In his revolt against mediævalism this great French satirist urged upon youth and monks the necessity of an hour's daily physical exercise in the open air, to be followed by proper ablutions. John Milton (1608–1674), in his famous "Tractate on Education," says, "The exercise which I commend first is the exact use of weapons; students must also be practised in all the locks and grips of wrestling, wherein Englishmen are wont to excel." John Locke (1632–1704), teacher, statesman, and philosopher, revives first among the moderns the ancient phrase of Juvenal, saying, "First a sound body, than a sound mind." Rousseau (1712–1778), the real destroyer in the eighteenth century and its greatest educational figure, permits nothing until Émile's twelfth year but physical development and training of the senses. Froebel (1782–1852), the child's prophet, gave play a fundamental place in all education in his "Education of Man" (1826). He first used calisthenic exercises for the physical development of children.

It was only the latter half of the nineteenth century that saw the general passage of mediæval ideas about

the body and the growth of the conception that the schools were to make physical men as well as scholars. Herbert Spencer led the van of this last attack, and the English, to-day, are the great outdoor-play nation, with horsemanship, rowing, cricket, Rugby football, and golf. Germany prefers fencing for student exercise, and follows Froebel also in giving play a training place in education, though the kindergarten itself is almost expatriated. Gymnastics and military drill, the latter due to the Napoleonic régime and for the most part a failure, are the exercise of French students. In America the national game is baseball, strongly seconded by football, track athletics, and rowing. The movement for gymnastics began in 1861 with the erection of a gymnasium at Amherst, with compulsory daily attendance. The physical training of girls receives special attention in America, — Radcliffe College, for example, having had a gymnasium before a dormitory.

This, then, is the place occupied by physical education in the thought of the world to-day, as guaranteed by its historic growth, and herewith the argument of this chapter in its bearing on the general question of the nature of education may be reviewed. Because of the influence of the body on the mind as defined, because of the consequent attention the body and brain should receive, and indeed are actually receiving from certain school agencies to-day, and have received in the past, it is evident that we are justified in including physical development as a necessary element in our conception of education. The Introduction, in Chapter I, taught us to think of education fundamentally as

development. "The Biological Aspect of Education," in Chapter II, taught us to consider it primarily as the superior adjustment of a conscious human being to his environment. Now the "Physiological Aspect of Education" teaches us that we cannot wisely neglect to conceive of it also as the development of the body. Including this last factor as an element in the definition already reached in answer to the question, What is education? we have the following, *Education is the superior adjustment to his environment of a physically developed human being.*

Second Definition of Education.

We have seen that biologically and physiologically education provides the brain with individual and useful habits of reaction on the world's stimuli, that it adjusts the conscious human person in a superior fashion to his environment, and that it develops his bodily powers. The ultimate definition of education cannot say less than these things, though it may have to say more. The being to be educated, upon whose nature depends the nature of education, is characterized not simply by life, with which biology can deal; not simply by the physical form in which his life embodies itself, with which physiology can deal; but also by companionship with his fellows, without which his nature cannot realize itself or grow toward completeness. That environment in the adjustment to which consists man's education must be capable of socializing man's nature. The new question arises, What is the nature of that environment through adjustment to which man becomes educated? And what does the social nature of man require of education? The answers to these questions must be found in the

"Sociological Aspect of Education," to which we now turn.

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CHAPTER IV

THE SOCIOLOGICAL ASPECT OF EDUCATION

The Nature of the Pupil's Environment.

The term *environment*, in our present definition of education, requires exposition of us. What is the nature of the environment to which man in the process of his education becomes adjusted? This is our new question. A child begins his life in ignorance of himself and of his world; he begins where primitive man began. Without educational assistance of some kind he must also live his life as primitive man did; he must depend upon his own experience for the lessons he learns. But since primitive man not only learned his lessons but also taught them to his children, the experience of the human race has been accumulating with the passage of the historic generations. It is this racial experience which constitutes the environment into which the latest child is born, and which gives him the handicap of the centuries over his primitive forbears.

In brief, the environment of the pupil is the achievement of the race, to which he potentially belongs, in the conquest of nature, in the movement of affairs, and in the knowledge of itself. It is a spiritual environment. The adjustment to this environment, which is the race's life, discovers to the pupil his own social capacities; he finds his own life in his

race's life. This sharing of the race's life is education as viewed by sociology. In the language of President Butler, who first described education in these terms, "If education cannot be identified with mere instruction, what is it? What does the term mean? I answer, it must mean a gradual adjustment to the spiritual possessions of the race."[1]

There is a special period in the life of each individual dedicated by nature to this process of adjustment. The first three years of a child's life are spent under the influence of the family and in getting possession of his body. The educational years, from three to twenty-six or more, are the special period of adjustment to his spiritual environment.

The term *spiritual*, used in describing the environment of man, is comprehensive and includes all the relations in which man as a conscious being stands to his fellows, to what his fellows have done, and to his own personal ideals. It includes man's relation to Nature as itself the embodiment of ideas. Did not man find Nature intelligible and responsive to his efforts to understand it, his relation thereto could not be included under the term *spiritual*. Its present inclusion in the spiritual environment to which man stands related intends by no means to settle the metaphysical question, whether nature ultimately is atoms in motion or an externalized form of mental energy, but only implies that no part of the environment of man is finally foreign to him. Everywhere man finds himself reflected in the universe in which he lives. Its ultimate confines may be unknown to

[1] "The Meaning of Education," p. 17.

him, but he will not admit they are unknowable. To admit such would be to cripple his ultimate efforts at knowledge and comprehension, and would be to readmit the reign of mystery in his world, which he has been at such pains during ages of ceaseless effort to banish. In borrowing President Butler's happy epithet, then, and in describing the environment of man as spiritual, there is no unwarranted extension of the legitimate meaning of the term. It opens complete range to the present aspect of the discussion.

The Method of the Pupil's Adjustment to his Environment.

The question arises at once, How does man become adjusted to this environment which his race has made and which is himself objectified, and which he himself is potentially? It is only by reproducing in his own mental history the mental history of the race. As biologists tell us that the human embryo in its development to physical maturity passes through the life history of organic forms, ontogeny repeating phylogeny, so must educators realize that the human mind in its educational development to mental maturity passes through the spiritual history of the race. Man, as himself a social being by nature, as a real part of an associated whole, reproduces in his own mental life the mental life of the race, and thereby becomes educated. Mental reproduction is the cause of education. The educated mind has been fertilized by the life of the world and is fruitful in its conceptions. Education is giving birth to mental heirs, and Socrates, the first great teacher of the Greeks, well described his vocation as the art of intellectual midwifery. He assisted the mind in bringing forth its

ideas. Often the reproduction of the spiritual environment is barren repetition, the struggle of the world toward knowledge and art and liberty coming out of the mind as it went in, unassimilated, unappreciated, and unused.

This production from within the mind of its own world in response to the stimulating effects of the world without is education as a process, as an activity. The youth thereby unifies himself with his race in the educational period, and becomes actually what he always was potentially. What his race has produced, he reproduces, and thus universalizes his individual nature and socializes his private impulses. Thus for him education is become the epitome of civilization.

Education as viewed by Sociology.

Thus from the sociological point of view, education is the reproduction of the spiritual environment. This aspect of education is called sociological because man, the reproducing agent, is social by nature, as Aristotle showed, and because the spiritual environment which he reproduces is the product of the thought, feeling, and action of man in organized masses. In adjusting man to his actual environment, education performs a social function. Man is not himself alone, but his life is in relationship to his fellows. Man is not a social deposit, simply, but his life has its self-conscious centre in himself. The bringing of the individual into unifying relations with society is the function which education has to perform. Hence this aspect of the discussion is called sociological.

Having seen thus the nature of the environment as spiritual to which man must be adjusted in education,

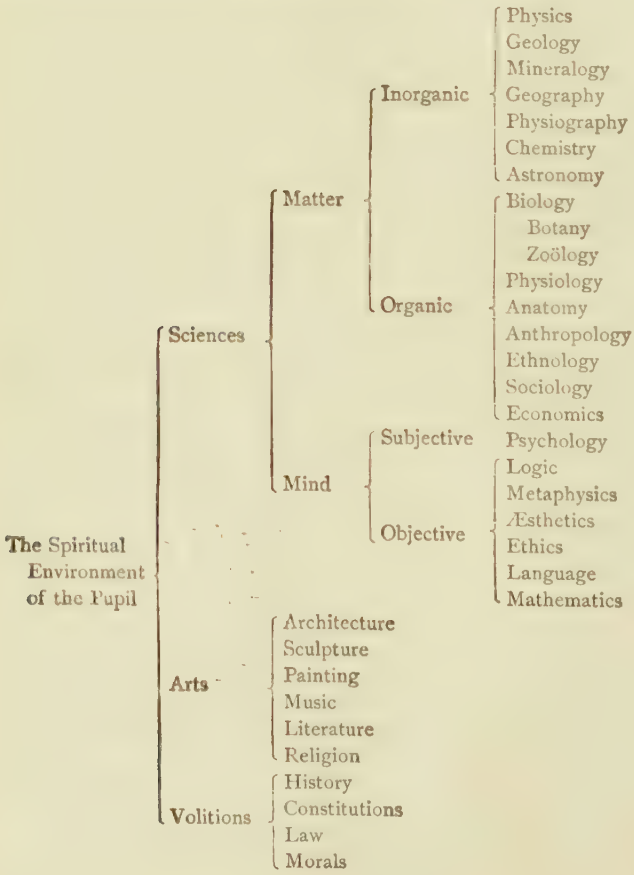
and the method of this adjustment as reproduction, we are prepared to open the three questions of the sociological aspect of education, viz., What are the elements of the spiritual environment? What are the social effects of its reproduction by individuals? and finally, What practical consequences follow for education from this aspect of the discussion?

The Questions of the Sociological Discussion of Education.

First, the elements of the spiritual environment. This question calls for a more specific consideration of the nature of the environment called spiritual by which man is encircled. The elements in the spiritual environment are three in number. The reason for this number lies in the nature of mind. The spiritual environment is the achievement of the mind of the race; these elements are consequently declaratory of the nature of the mind of the race; but the racial mind is but the individual mind writ large: psychologists are agreed that the different ultimate modes of being conscious, the final phases of mental life, are three in number, viz., the mind knows, and feels, and wills, that is, it has an acquaintanceship with the external world in which it takes a certain pleasure or displeasure, and on which it works certain energetic reactions. Consequently the three elements of the spiritual environment are the intellectual, what is known; the emotional, what is felt; and the volitional, what is willed. Considering the objects of these mental activities, the mind knows truth and avoids error; it feels, as its highest object, beauty and avoids ugliness; and it wills, in momentous issues, goodness and avoids evil. These are the natural points of impingement of the mind upon the external

The Elements of the Spiritual Environment.

reality, with their foil-like, accompanying trail of the serpent, whatever that may finally be. Truth, beauty, and goodness, then, are the race's spiritual ideals, and the adjustment of the child to these essential realities that the history of the race has disclosed, is the task of supreme moment which is set for education.



The Nature of the Intellectual Environment.

What is the nature of the intellectual environment of the child? It is what is commonly called Science, and is produced by the mind of the race in its attempt to understand the physical and mental world in which it lives. Science is a product of the effort of the mind to know the truth concerning reality. It is a resultant of intellectual activity interpreting the world. In the broadest sense of the term, science is knowledge. What divisions can be made in the knowledge which man has of his world? That is, what are the sciences?

The universe in which man lives contains, for practical purposes of classification, matter and mind. This present division does not commit us in advance to dualism as the ultimate metaphysical point of view. Concerning each of these realities, man has attained and is attaining knowledge. They are first discovered by man in the order mentioned, first matter and then mind, by man who first looks outward and then inward. In the words of Tennyson, the people's poetic philosopher: —

"The baby new to earth and sky,
What time his tender palm is pressed
Against the circle of the breast,
Has never thought that this is I.

"But as he grows he gathers much,
And learns the use of thou and me,
And finds, I am not what I see,
And other than the things I touch."

(1) What is Matter?

How shall we think of matter, the reality first discovered by mind? Ordinarily we do think of it in

two ways, viz., as inorganic and organic. Organic matter is such an assemblage of parts that each part is essential to the life of every other part. In an organism, like a plant or an animal, each part is both means and end. Inorganic matter, like a rock or a mountain, is an aggregate rather than a unity.

But our question was intended to go deeper than our ordinary thought about the nature of the matter. This takes us at once out of the field of experience into that of speculation, where our present purpose does not permit us to tarry long. The last words of physics, the typical science of inorganic matter, concerning the ultimate nature of matter are atoms in motion; or ions, infinitesimal divisions of the atom; or electrons, infinitesimal electrified bodies; or centres of force. The last words of biology, the typical science of organic matter, are life, the correspondence of internal to external, and primordial protoplasm. In these last words of the typical physical and natural sciences, they have already become philosophy, and it is fitting to hear what philosophy itself may say. Here the last words are, crude indefinite and unorganized stuff (Plato), an unknown thing-in-itself (Kant and Herbert Spencer), the not-self (Fichte), and the infinite idea self-objectified (Hegel). Without definition of these positions, which would take us too far afield, it is clear to say that matter provides the mind with sensations, which mind alone without the medium of matter of some kind does not seem capable of doing; also that matter is external to mind; also that matter is, to a degree at least, intelligible to mind. For us an object is a unity of sensations that will go together, and beyond this

our knowledge does not carry us. It is gratuitous to assume that, if the object were completely known, something entirely different would be discovered there from that which is already known concerning it. Combining these conceptions into a single one, we may say that matter is the *extra mentem* object of thought, making sensations possible. This is what we finally know about the reality of material environment, which is also a portion of the spiritual environment in relation to which man stands. Nothing that we know about matter forbids us to believe, and everything that we know supports the belief, that mind is the ultimate reality of the universe. So far as matter alone, then, is concerned in the question of one's metaphysical point of view, our present position is rightly described as idealism, and this is our general answer to the metaphysical problems previously shelved concerning the relations of consciousness to the brain and mind to matter. The little that we already know about matter as mind "in its otherness" or objectified form shows us how meagre are the confines of human knowledge after centuries of intellectual effort to comprehend, and what a useful disposition could be made of measureless time in the extension of knowledge, should it be vouchsafed us.

(2) What is Mind?

The discovery of the self follows upon the discovery of the not-self. Knowledge is first of matter, then of mind. Matter reduces itself in the last analysis to a sensation-producing extra-mental object of thought. What is the nature of the mind that first discovers matter and then itself? It was mind that we used in discovering and defining matter. Mind, then, is our

instrument of discovery and definition. Mind it is wherewith definitions are sought and framed. It is our view-point of our world. The eye of the mind, after looking outward at the material world, may look inward at itself, as when a man in a mirror sees himself seeing himself. Through this inward looking of the mind's eye, commonly called introspection, mind is immediately aware of itself. What is itself? The mind reveals its nature in its processes and its products. The difficulty in defining mind is mainly due to considering it abstractly, apart from its manifestations. The attempt at such a definition can end only in synonyms, like consciousness, the state of being aware, intelligence, etc. Mind is the unity of its appearances. It is no thing-in-itself, lying back of the phenomena of consciousness, unknown and unknowable. It is the synthesis of those concrete experiences known to all as sensation, perception, memory, thought, feeling, will, and the rest. Mind is not one of its own aspects; it is the real unity of all conscious experience. Consciousness is never just consciousness but is always *of* something. To define consciousness as such, and without any content in terms of its synonyms, is an intelligible but unserviceable procedure. Such consciousness is only the abstract possibility of those concrete mental experiences that occupy our waking lives. To understand the nature of mind, it must be found concretely, in its processes and products, that is, in the mental sciences. What are the sciences of matter and mind?

The attempt of the human mind to know the inorganic phase of its material environment has taken

shape, first, in physics, the science of inorganic matter, of its laws and properties, and of the forces acting upon it, and, as Bacon called it, "the mother of sciences." Then follow, in succession, geology, the science of the earth's form and structure; mineralogy, the science of certain naturally formed chemical substances of definite constitution and usually crystalline form, called minerals; geography, the science of the surface of the globe, its features, products, and peoples; physiography, the science of the globe's climate, moisture, and atmospheric and oceanic currents; chemistry, the science of the changes in the composition of molecules of matter; and astronomy, the science of the heavenly bodies.

(3) The Classification of the Sciences.

Man's knowledge of the organic world has taken form in biology, the science of plant and animal life, the type and head of the organic sciences, dividing itself into botany, the science of plants, and zoölogy, the science of animals. Then follow physiology, the science of the functions of the organs of the body of plants and animals; anatomy, the science of the structure of the organs of the animal body; anthropology, the science of man comprehensively viewed, and particularly in his primitive state; ethnology, the science of the races of mankind; sociology, the science of the constitution, phenomena, and development of human society; and economics, the science of the laws of the production and distribution of the wealth of nations. The term *organic*, as describing these sciences, here includes not simply individuals, but also groups of individuals acting in organized masses; and economics, whose classification on any

basis is not easy, is placed here as the science of one of society's products, viz., wealth.

The attempt of the human mind to know itself takes two forms, viz., the mind may know itself as such, its own processes and their explanation; and it may know itself in its products and their nature. The processes of mind would be sensation, perception, memory, attention, reasoning, and the like; the products of mind would be philosophy, language, mathematics, and the like. The former division is the science of mind as subjective; the latter the science of mind as objective.

The typical science of mind as subjective is psychology, the description and explanation of states of consciousness as such. The description of a state of consciousness, such as attention, memory, perception, etc., is its analysis into its constituent elements. The explanation of a state of consciousness is its corresponding brain state. Wherever mind is, there is psychology's opportunity. So there is a psychology of the animal, the child, the adult, society, the races of mankind, and of mind in its abnormal conditions of insanity, hypnotism, etc. The mind gets knowledge of itself as such through introspection alone and through experiment and observation interpreted by means of introspection. Introspection is self-observation; experiment is the approach to the mind through apparatus; observation reaches the mind of others through its physical manifestations.

The sciences of mind as objective are logic, metaphysics, æsthetics, ethics, language, and mathematics. All these are the objectified products of the

human intelligence. Logic is the science of thought as an objective reality. Metaphysics is the science of ultimate principles. Æsthetics is the science of the sense of beauty, Ethics the science of human conduct. Logic, æsthetics, and ethics are the objective mental sciences corresponding to the three subjective mental powers of knowing, feeling, and willing, and deal respectively with Truth, Beauty, and Goodness, as objective ideals. The history of philosophy is the written record of what men have thought on mental and speculative problems.

The expression of thought in words is language and the science of language is grammar. A new language learned is a new expression of thought, a new weapon with which to think. Language is the door to literature, which is one of the expressions of the emotions, and will have its place later in the discussion of the emotional environment of man. The usual divisions of the science of language include reading, writing, analyzing, the study of foreign languages, all ending in the master language science of comparative philology.

Finally, of the objective mental sciences, there is mathematics, the science of what the mind has produced in the realm of number, of measurement, and of quality. As soon as any other science becomes capable of being strictly measured or of statement in numerical terms, it begins to use mathematics. The exactness that characterizes this science is due to its being the mind's own objective product. The usual divisions of mathematics, showing the mind's progressive comprehension of quantity, are arithmetic, the

science of number; algebra, the science of symbol; geometry, the science of form; trigonometry, the science of angles; analytic geometry, the application of algebra to geometry; and calculus, the science of the ratios of numbers.

(4) Sciences and Arts.

This enumeration concludes the list of the main sciences, material and mental, that compose the intellectual element of the spiritual environment of man. As sciences they are all theoretical. But in our world theory and practice, truth and life, are so interwoven that many of the sciences have corresponding arts. Theory, after all, is but practice comprehended, and practice is but theory applied. Truth is life understood and life is truth embodied. Using Professor Jevons's noted distinction, a science teaches us to know; an art to do. In science, *scimus ut sciamus;* in art, *scimus ut producamus.* In science we possess systematized knowledge; in art we use knowledge. In addition to meaning the use of knowledge for any end, as the art of war, the art of navigation, etc., the term *art* has two other common uses, viz., the use of knowledge in producing the beautiful, as painting, sculpture, etc., in which sense alone art is its own excuse for being; and also the term includes the products of both the æsthetic and the volitional powers of mind, as in the common phrase, "Faculty of Arts and Sciences," and in the designation of the degree of "Bachelor of Arts," excluding thereby historically only the sciences, for which it is customary to use a different scholastic degree.

To illustrate the application of the theoretic sciences to the practical arts, reference may be made to the

following sciences and their corresponding arts, viz., physics, and mechanical engineering; geology and mineralogy, and mining and metallurgy; physiography and meteorology, and the weather bureau; chemistry, and industrial chemistry; astronomy and geography, and navigation and travel; physiology and anatomy, and medicine; anthropology, ethnology, sociology, economics, and the settlement of social questions; physiology, psychology, the social sciences, and teaching; logic, and thinking; ethics, and conduct; grammar, and speaking and writing; mathematics, and civil engineering. These sciences with their corresponding arts indicate how knowledge is first for its own sake and then for life's sake.

The question is sometimes asked as to the chronological priority of arts and sciences. It is practically the invariable rule that first we do and then reflect upon and understand what we did. First language, then grammar; first morals, then ethics; first thinking, then logic; first medicine, then physiology; and so on. The course of human progress in the arts and sciences seems first to have been a weak and empirical kind of art; then the science of this art painfully worked out; then, finally, rapidest progress in putting the art on a scientific basis. First crude navigation hugging the shore; then astronomy and geography and the mariner's compass; then, finally, the navigation of the deep seas. First teaching; then physiology, psychology, and the social sciences; then teaching as an applied science. Teaching to-day is passing from the empirical, the experimental, the customary, to the rational and the scientific as its basis. A noted

case where it is still uncertain whether practice preceded theory is in the ritual-myth controversy, though analogy would go to indicate that the myth is an attempt to explain the ritual.

The progress of the sciences themselves, apart from their relation to the arts, has been from the empiristic to the rational, as from the alchemist to the chemist, from the astrologer to the astronomer, and from the medicine-man to the physician.

(5) The Educational Value of Science.

The child born into the world helpless and ignorant is encompassed by this knowledge preserved in books, which the race to which he belongs has wrested from the bosom of nature and the heart of man. He begins life an alien and a stranger to this science. His education, though reproducing in his own mind something of what the race has discovered and known, adjusts him to this intellectual element in his environment, puts him at ease in his intellectual world, so far forth socializing him and making him ready for living in human touch with Nature and Man. No student in the educational period fixed by his own development can attain the universal knowledge which the race has discovered, nor is this necessary for educational purposes. Sufficient is it for him to know enough concerning the essential facts of men and things to live in comprehension of his world, to get the message of courage in investigation that comes from the scientific achievements of the race, to appreciate the unity of human knowledge, to know enough truth to free the intelligence from the bondage of superstition and fear, and to be open in expectant waiting to all truth. These are the worthy

lessons of science, which needs to-day to add to its virtues yet another, viz., to become conscious of its long, toilsome history, that more of reverence may grow with the increase of knowledge.

Apart from these general considerations, there are certain specific consequences of scientific study in the way of training and culture that make it necessary for the education of the child to adjust him to his intellectual environment. Consider, first, the effects of the study of the sciences of matter. They develop the mental powers of observation, inference, and insight. Observation collects facts by the detection of resemblances, and the discrimination of differences; inference sees the consequences of facts; and insight, their meaning. They test and train the mental powers of abstraction, of forming general concepts of a group, and of framing logical definitions with correct *genus* and *differentia*. They permit the gathering of knowledge at first hand, in the subtle pursuit of Nature's own secrets, and they require precision, and accuracy, and clearness in results. They arouse and feed the spirit of acquisitiveness and communicate practical knowledge. They give knowledge of Nature, leading surely to command of her powers, and perhaps to love of communion with her visible and audible forms. They give one respect for his own intellectual power, which is a part of that racial mind that has compassed the universe in its conception, though not in final comprehension; and they lead to a vision of the unity of the material world. They disclose the suggestion of intelligence in matter, allow the recognition of the character of Nature as

finally phenomenal, and the character of the immanent Mind, without which Nature would be unintelligible, as finally noumenal and the ultimate reality. And last, since matter first of all things presents itself to the child's and man's awakened mind, the acquaintanceship with it through the material sciences, both inorganic (otherwise called physical) and organic (otherwise called natural), is the basis of other and later things to come.

After matter, mind. Why should the child be adjusted in his educational period to the mental sciences, both objective and subjective? To know himself, the microcosm reflecting the nature of the macrocosm, as in the subjective mental science of psychology. To learn how he ought to think, and so, perchance, to think more truly, as in the objective mental science of logic. To learn what the lovers of wisdom of all times have thought concerning truth, and so to be guided in his own thinking, as in the history of philosophy. To discover what answers can be given by the human mind to its own ultimate inquiries, which by its nature it cannot but raise, and yet not completely solve, as in metaphysics, the queen of mental sciences. To understand the nature of the beautiful and the ugly, and so, perhaps, to enjoy the one and remove the other, as in æsthetics. To understand the nature of righteousness and sin, and so, haply, to cling to the one and despise the other. And finally, to comprehend the expression of thought in language, and so, possibly, to become efficient in the communication of thought in speech and in writing.

In each case the mental result of the pursuit of these sciences is certain, the practical result uncertain, but desirable. This is because to do is not so easy as to see what 'twere good to do. As Shakespeare makes the learned Portia say: —

"If to do were as easy as to know what were good to do, chapels had been churches, and poor men's cottages princes' palaces."

Doing is not so easy as seeing what ought to be done, because perceiving the truth is easier than the more energetic act of willing the truth. The failure to draw this distinction led the wise Socrates to slip in his famous dictum that knowledge is virtue, to whom it did not seem possible that a man should know what was best for him and yet not do it. Knowledge is indeed a means to virtue, but it is possible for a man to see the light and turn from it and walk in darkness. The theoretic comprehension of truth solicits, but does not compel, obedience.

But we left unsaid our word about mathematics, as the last in the list of the objective mental sciences. Like psychology, mathematics is a descriptive science, and not normative, as logic and ethics. In mathematics there is no distinction between the is and the ought. The comprehension of the theory of mathematics entails necessarily the practical consequences that are desirable, for these practical consequences are here primarily training and not conduct. Apart from its manifold applications, mathematics is the inevitable disciplinary element in the curriculum. It trains in the habits of logical and symbolic thinking, of precision and concentration, and it develops

the imagination. Its logic is particularly of the deductive rather than the inductive type, for its arguments are from axioms and principles rather than from collected facts. Algebra and equations representing curves use symbolic thinking. The precision of mathematics is due, as previously noted, to the fact that the mind is here dealing with its own achievements in the field of quantity. The habit of concentration is developed in following through a series of equations in a single problem. And the use of the imagination is required in descriptive geometry, and in conceiving the non-Euclidian space. In the words of a recent writer, M. Berthelot : —

"Mathematics gives one a clear idea of demonstration and accustoms him to form long trains of thought and reasoning methodically connected and sustained by the final certainty of the result; and it has the further advantage, from a purely moral point of view, of inspiring an absolute and fanatical respect for truth. In addition to all this, mathematics, and chiefly algebra and infinitesimal calculus, excite to a high degree the conception of the signs and symbols — necessary instruments to extend the power and reach of the human mind by summarizing. Mathematics is the indispensable instrument of all physical research."[1]

The educational value of science guarantees it a permanent place in the school curriculum. The problem is to adjust its rights with those of art and the volitions.

[1] "Science as an Instrument of Education," *Popular Science Monthly*, Vol. 51, pp. 253 ff.

This concludes our discussion of the nature of the first of the three elements of the spiritual environment of the child to which his education must relate him, viz., the intellectual; and it remains to consider similarly the emotional and the volitional.

The Nature of the Emotional Environment.

Under this treatment of the emotional element of the spiritual environment which must become a part of the life of the child will be included the highest products of the emotions of man, viz., Art and Religion. The constituent of the child's environment which we call emotional is what man has felt and its modes of expression. It is what we call Beauty, as the intellectual element is what we call Truth. Man feels, when feeling has reached its truest object, the beautiful, and the expression of the beautiful in permanent form is Art.

The Nature of Beauty.

What is the beautiful? Subjectively, it appeals to the sense of the perfect in the mind. Objectively, it is the harmonious, the symmetrical, especially as this quality appears in the unifying of diverse elements. The crude stuff of the world has been called, since the days of the Greeks, matter. When matter begins to embody an idea in harmonious form, it begins to be beautiful.

Art, as the expression of the beautiful, is the union of the material and the spiritual, the union of matter and mind, the union of the real and the ideal. When matter begins to show forth the work of mind and when mind begins to manifest itself in matter, then is Art the result. Matter becomes in Art the permanent expression of some human idea, or feeling, or action, or any union of these. Without mind, matter

is only the possibility of Art. All Art is a kind of autobiography. "You cannot produce Art without a man," said Wagner. The Romans first said that the principle of Art is unity in variety, the unity of idea in a variously wrought-out piece, and Coleridge reaffirms this ancient insight.

The artist is the executor of the idea in material form. Following an inward impulse to create, which men formerly called the *divinus afflatus* and to-day call genius, he lays hold of that material form in which he can best express himself, masters its technique, and produces art. The grade of work, from the ugly to the perfect, depends upon the genius of the artist and his technique, which is his mastery of the matter chosen as his medium of self-expression. Plato conceived of the whole world as a work of art, fashioned out of chaos by the *demiurgos*, the divine worker for the people. But matter was difficult to form, and so arose the ugly.

The Arts. In how many pleasing and permanent material forms may the life and mind of man take shape? What is the number of the arts? There are five separate arts, viz., architecture, sculpture, painting, music, and literature. Other modes of artistic expression are accessories of these. Drawing, landscape gardening, and engraving go with painting; dancing, the poetry of motion, and vocal music go with music; elocution, the histrionic art, and oratory go with literature.

A few brief words of description and interpretation of each of the arts will serve to define more precisely the nature of the æsthetic environment and

its mission in the education of man. Architecture is the art of building. In it the sensuous material is in excess, adumbrating, not clearly revealing, the ideal. Suggestions of the ideal appear in the contrast of light and shade, in the color, in the variety and the relationship of the lines one to another, in the strength and fitness of the whole, in the harmony and proportion of the masses, and especially in the poised conflict between the down-pressing weight of the heavy portions and the upholding strength of the supporting pillars. Architecture is the one case where beauty is not its own excuse for being, for buildings are primarily for use. The ornament is for the building, not the building for the ornament. The building both protects and serves. Not all buildings are beautiful, though all are useful. It is the function of architecture to combine the useful and the ornamental in the buildings of men, be they devoted to religious, state, social, or transportation purposes.

Sculpture is the art of carving, cutting, hewing, wood, stone, or metals into statues or ornaments. It is the permanent embodiment of an animate form, human, animal, or plant, and showing, in the case of the human or animal form, muscular development and attitude. Sculpture is a higher step toward ideality than architecture, being less subject to the domination of matter.

Painting is the art of representing objects in color on a flat surface, hence from a single point of view. The painter, like the sculptor, puts the life of his soul into his work, even if it be some material ob-

ject, and the work is beautiful in so far as it expresses the soul of the painter. The elimination of the third dimension of space in painting abstracts from materiality, which in consequence is yet more ideal, — the mind having to supply more to realize the scene than in sculpture.

The three arts now considered appeal to the eye and occupy space, are visual and spatial. The next art in the list of five appeals to the ear and occupies time, is auditory and temporal.

Music is the art of tones. A tone stands in contrast with a noise, both being sounds. A tone is due to periodic, a noise to non-periodic, air vibrations. Time is the condition of music, and thus every trace of the three dimensions of space is suppressed. This fact accounts for the untrammelled character of the mind's production in music and for the high ideality of this art. The content of music is man's inmost emotional nature. The emotions of man in the presence of the facts of nature or the experiences of human life find voice in music. With its unutterable and indefinable message from the soul to the soul of man, music summons us away from the known hard world of reality to the unknown, invisible, and perfect world of ideals, where things are as we want them to be. It is an ecstacy of feeling, not a clear vision. Music cannot tell a story; it expresses emotions. Chopin's "Funeral March" means different things to different listeners, but the emotions of all are thrilled. Music cannot paint a picture. When the same piece of music suggests the same picture to different

minds, it is because of the associations of colors, ideas, etc., that the tones have, not because the composer has the picture in mind to represent. True, in a freakish spirit, Wagner can imitate natural sounds in his music; but his great underlying theme is a lonely soul longing for congenial companionship, which is the story of his own life. Thus, music is a call to an experience, not to ideas, and is hence the most subjective of the arts. The attempt to fit music to words is like the attempt to define a feeling, is artificial, and not within the true province of music.

Literature is the art of letters. It has been defined as "the written record of valuable thought, having other than merely practical purpose." [1] It aims primarily, not to convey positive knowledge, but to enthuse, to inspire, through fineness of thought and beauty of style. Originally it appealed to the ear, and when in its poetic form still depends on time, and not on space. Poetry is the rhythmical, and sometimes the rhymed, expression in language of the true, the beautiful, and the good. Literature, whether in its poetic or prose form, is always fine thought fittingly clothed. The poetic form of literature is itself of three kinds, epic, lyric, and dramatic. The epic is racial, like Homer and Beowulf; the lyric is individual, like Wordsworth's nature poems, or Shakespeare's sonnets; the drama is social, and may be either comic or tragic. In comedy the individual is pitted against society and overthrown, but not to his own undoing, as Falstaff in the Henry plays. In

[1] Richardson, "American Literature," p. 1.

tragedy the individual is seriously overthrown by society, as Antigone or King Richard. Tragedy is the conquest of society over the individual that attacks it. Without this social conflict there is no dramatic situation. In tragedy and in the more serious prose works, literature is closely akin to philosophy. Literature is the lasting expression of the meaning of life more or less intuitively reached. Philosophy is the systematic expression of the meaning of life more or less rationally reached. The truth of literature is philosophy; the garment of philosophy, when it is well clothed, is literature. As a product of society literature requires genius, leisure, and experience. America has the genius latent, but it is too youthful, and, as a part of its youth, is still too devoted to material pursuits, to establishing the basis of its civilization, to have produced yet a name to rank with the world's five greatest in five ages born, viz., Homer, Virgil, Dante, Shakespeare, and Goethe. Poe is our widest known name, though Longfellow is doubtless our laureate.

Reviewing the arts as constituting the emotional environment of man, it is to be remembered that their common principle is that variety in unity announced by the Romans, repeated by Coleridge, and expressed by Wordsworth as "a multiplicity of symmetrical parts uniting in a consistent whole"; also that their origin is due to the play impulse as previously shown, and as expressed in the saying of William Morris that "Art is the expression of man's pleasure in his work;" and also that underlying all these arts of the beautiful is æsthetics, the science of the beautiful.

The development that the æsthetic element in life is likely to make will be through the production in an æsthetic way of the commonest things, the decoration of the useful.

The Nature of Religion.

At the beginning of the discussion of the emotional element in the spiritual environment, religion also was mentioned as one of the highest products of the emotions of man, and so as highly constitutive of the environment into the full appreciation of which the child must come. Religion and art spring from the same fount of the personal being, viz., the feelings. Art is the expression of the feelings in the presence of the beautiful or sublime; religion is the expression of the feelings in the presence of the divine. When the divine is considered perfect and beautiful, as well as true and good, then religion and art have in part identical elements. The fundamental feeling in the presence of the divine, the Ideal Person, is, as Schleiermacher says, the sense of dependence. Religion is not primarily what a man thinks; this is dogma, creed, or philosophy. Nor is religion primarily what a man does, for the deeds of man may be done under necessity or from motives of prudence or convention. But religion is primarily what the man is, what he feels, in the presence of the Supreme Person, and then, *and then*, what he thinks and does in consequence of such feeling. The translation of the feelings inspired by the presence of divinity into thought is theology, the science of religion, and into volition is the daily deed and ceremonial usage that constitute the practice of religion. The infinite, which can be thought but not imaged, is opened to the youthful

mind in religion — the infinite in time, which is eternity; in knowledge, which is omniscience; in power, which is omnipotence; in goodness, which is holiness; and in love, which is the Divine Passion, revealing the unity, the at-one-ment, of the human and divine in suffering. Religion is the broadest thing in the world, and its effects upon the growing mind ought likewise to be the most broadening of influences. Unfortunately the best educational service of religion is narrowed from insistence on the human unessentials instead of the divine essentials.

The absence of anything like religious *instruction* in our public schools must be considered as inevitable under our form of government, which provides for the separation of church and state, and at the same time for the public education of all youth. To put religion into the curriculum of the public school would contradict the principle of the separation of church and state. To say that the public school ought not to exist if it does not teach religion, is to contradict the principle upon which our national system of public education is founded. Experience has indicated the wisdom both of the separation of church and state and of the existence of the public school system. Thus the logical result of our form of government is that religion be not taught in public schools. This result is also desirable, in the interest both of religion and democracy. Religion cannot be taught. To attempt to teach religion is to reduce it to theology, as the attempt to teach morality is to reduce it to ethics. The democracy would also suffer by the attempt to teach religion in the public schools, in that certain

elements in society would at once withdraw their support from a government no longer religiously free. To-day the public school is the great preserver of that homogeneity in society necessary to a democracy. It would cease to be so the moment it began to teach religion. The public school itself, finally, would suffer loss of influence the moment it ceased to serve the best interests of the democracy.

Yet it remains true that religion is the most important element in the life of man, and consequently the most important factor in that spiritual environment to which the education of the child must adjust him. Fortunately for the interests of religion, the democracy, and the public school, religion is a life, not a system; is a natural expression of human nature, and not an artificial graft upon it; is a growth of the pupil's nature, not an acquisition of his intellect. This being true, religion can be developed, if not taught. As the religion of the life of the teacher touches the germs of religion in the life of the pupil, they spring into activity and growth, like seed in the soil under the quickening touch of sun and rain. Religion as theology is excluded from the public schools only to make way for religion as life. If teachers are religious, pupils do not need to be taught religion. This is not to minimize the importance of the teaching of religion as a system of truths in the home and the church, — there must be truth as well as life, — but only to indicate the relation of religion to the public schools.

The subject of religion in the public schools is essentially related to the problem of the nature and

extent of the possible use of the Bible in the public schools. A few things are clear. A fairly familiar knowledge of the Bible is essential to that broad culture of man which it is the function of education to give. The Bible provides models of high grade of practically all the leading forms of literature. It interprets life in terms of the loftiest ideas possible for man to conceive. It announces principles of highest ethical and religious value for the conduct of man. Because of these things it is necessary that in some way the life of growing youth incorporate the life of the Bible. But it is another question whether it is the function of the public school to render this service. This latter question to-day is essentially a legal one, however infrequently this fact is recognized. As such, it is wholly subject to the power of public opinion. Public opinion to-day is strong, but not unanimous, in supporting the reading of the Bible, without comment, as part of a simple devotional morning exercise, consisting also of singing and prayer. This quiet uplift of the school interests into the eternal world, as a voluntary exercise, effacing human distinctions and uniting human hearts in a divine life, will not lightly be surrendered by a nation whose officials are inducted into office with an oath by the Scriptures and that stamps upon its coinage its trust in God. To go farther than this and ask that the Bible be used as a text in morals or even in literature would be good for morals and literature, no doubt, but not for religion, whose interest it is the prime function of the Bible to serve. The teaching under any guise in the public school of the book upon which all the religious sects

are founded would end unavoidably in involving sectarian interpretations. It would also tend to reduce to the level of an ordinary text-book that volume of the Christian religion whose sacredness is regularly held to be essential. The Bible can retain its present place in the public school, not as a book to be taught, but only as its own spokesman to the spiritual life. For the necessary work of instruction in the Bible the public school must leave to the derelict American home and the Christian church their duties to perform.

With the substitution of the spirit of the religious life for the letter of religious instruction in the American public school system in contrast with foreign systems, our teachers have both their greater opportunity and their weightier responsibility. Not theirs to keep religion from being odious through compulsory instruction, but to make it attractive through contagious example; not theirs to keep alive the spirit when the letter killeth, but to show forth the spirit when the letter is absent; not theirs to instruct the intellect with religious truth, but to quicken the heart with religious life; not theirs to be priests of a particular religious institution, but prophets of the universal religious nature.

The Educational Value of Art.

Why should the child in the schools be adjusted to the æsthetic element of his environment? Without doubt it is the most neglected feature in our curriculum, and yet it stands as an essential constituent of the child's present and future environment and is the product of one of the deepest phases of the human consciousness. The sense of the beautiful is

the finest pleasure the human mind can enjoy, calling into play all the powers of mind working in harmony. The beautiful object itself is harmonious and perfect, and, in enjoying it, one identifies himself with it, becomes the thing he enjoys for the time being. Reverence for the beautiful is an uplifting force in the individual life. Beauty reminds morality that perfection is possible, and the holiness of beauty enhances the beauty of holiness. An æsthetic appreciation of the beautiful makes the imperfect and the ugly more dissatisfying and repellent, and so tends to remove it from existence. This is the practical outcome of the love of the beautiful. Its selection means the death, by atrophy, of the ugly. The doctrine of the beautiful shows that life need not be exclusive to be worthy, but may be abundantly inclusive. The Puritan ideal of goodness needs to be supplemented by the Grecian ideal of beauty. The life of the Middle Ages was richer because there was the cathedral builder as well as the monk. That which is ultimately beautiful is also good. The feeling of this truth is needed to bring up into just emphasis the æsthetic studies of the schools. Pupils in the schools who know their science and their history could not purchase a good picture and would not spiritually miss from the room a piece of art. The failure to possess this appreciation of art is arrested development, is individual defect, is inability to come fully into the life of the race, and so to universalize one's own life. In so far forth education fails of its end, viz., the complete socialization of the individual life.

Literature, in particular, widens the individual

experience by presenting typical and universal human characters, making our acquaintanceship world-wide, which otherwise would be limited, as Tennyson says, to "the rustic murmur of our burg." For jealousy, ambition, a sister's devotion, the hard schoolmaster, in typical forms, we go, not to life, but to literature. These ideal, that is, mentally constructed, personages suffer, and we are instructed by their sufferings. As Aristotle showed, we pity their ends, and fear similar things for ourselves. Thus are we purified and taught. In literature we see mirrored our possible selves, and so progress in that self-knowledge which the wise commend. This learning from the lives of literary creations, Commissioner Harris aptly names the vicarious element in literature.

The effect of the omission of the æsthetic element in life is so well portrayed and deplored by Darwin in his autobiography that perhaps the quoting of the familiar passage is pardonable. He writes: "Up to the age of thirty or beyond it, poetry of many kinds gave me great pleasure; and even as a schoolboy I took intense delight in Shakespeare, especially in the historical plays. I have also said that pictures formerly gave me considerable, and music very great, delight. But now for many years I cannot endure to read a line of poetry. I have tried lately to read Shakespeare, and found it so intolerably dull that it nauseated me. I have also lost my taste for pictures and music. . . . . If I had to live my life again, I would have made a rule to read some poetry and listen to some music at least every week; for perhaps the parts of my brain now atrophied would thus

have been kept alive through use. The loss of these tastes is a loss of happiness, and may possibly be injurious to the intellect, and more probably to the moral character, by enfeebling the emotional part of our nature."

After these words from the most eminent of modern scientists little need be said in support of the growing tendency in American schools to have buildings of admirable architecture, to place statuary and paintings in the school room, to have music in the exercises, to make the grammar secondary to the literature, to teach the elements of color and form, to beautify the landscape and practise the presence of the æsthetic with school gardens.

The Nature of the Volitional Environment.

After the intellectual and the emotional comes the volitional element of the social, which is the spiritual, environment. The race has been thoughtful, comprehending, and busy interpreting its world; hence arose the intellectual environment into which the child is born. The race has been sensitive, appreciative, and affected by its world; hence arose the emotional environment of the child. And the race has been active, original, and energetic in moulding the circumstances into which it was naturally cast; hence arises the volitional element of the spiritual environment. Having to do with the will, being in fact the product of the will, it is sometimes technically called the practical environment. It is the last element to which the child must be adjusted in his educational period.

What is the volitional environment? It is what man has achieved, and the record of such achievement. It is the monument of the will of man.

There are three ways in which the will of man may act, viz., as an individual, as society, and as a nation. Society is individuals organized, and a nation is a compact society. The social and national wills are not entities in themselves, but represent the consensus of opinion of the majority of the individual wills, or is supposed so to do. In so far as an individual acts, we have morality; in so far as society acts, we have laws; in so far as a nation acts, we have constitutions; and in so far as records of these actions are preserved, we have history. Thus there are four members of the volitional environment, viz., history, constitutions, law, and morals. Each of these must have its word in further definition of the volitional environment.

The Volitions.

1. What is history? Herodotus, the father of history, says it is investigation, and what is learned thereby; hence its Greek name, ἱστορία. This conception is still present in our thought of history. But what is learned?

The Nature of History.

Emerson and Carlyle say, the lives and influence of great men. History is biography. But the great man needs armies of soldiers, navies of sailors, hosts of followers, and a people, to be effective on an historical scale. Napoleon without the Old Guard is an exile.

Thus many have been led to say that history is past politics. Most of the historians before J. R. Green were of this type. In the narration of past politics it is a subtle temptation to the historian to let his own prejudices color his view. Like a pane of glass through which one looks, itself unseen, or like a

telescopic lens, bringing distant objects near but not distorting them, so should be the historian.

This position has given foundation to the school of history founded by Ranke, who modestly sinks his own personality behind the words: "I will only relate how it really was." History then becomes the unwritten record of the facts of human achievement, and it is perhaps most commonly so conceived. Many are those who say, however, Who will show us any veritable facts in history? The difficulty of discovering precisely the nature of the past sometimes leads these questioners to adopt the sarcastic statement of the great Napoleon, who made his own precedents, and learned nothing from the facts of the past, viz., "History is fiction agreed upon." In the same vein it is sometimes heard that history is the record of what never happened, which saying can be passed over in the same light spirit in which it is uttered in favor of the conception that history is the record of human activity.

Passing from the definition of history to its interpretation, which is an unwelcome task to the majority of historians, who find themselves more than occupied with the facts alone, but which is a natural inquiry to a synthetic and bottom-seeking mind, there are two contradictory theories, the one of Helwald and Buckle and that of Hegel. The former theory says that history is a necessity, and that the events of the past could not have happened otherwise than they did. History thus becomes "the dull rattling off of a chain forged innumerable ages ago." Nature knows no exceptions to its laws, this theory says, and human

nature which is responsible for history is but another kind of nature. Consistency would seem to demand that man be denied the freedom in his deed that it is known nature does not possess.

The objections to the view that history is necessity are three. First, if history were necessity historians ought to be able to predict the future, as astronomers predict eclipses, but they are not. The prediction of the number of thefts, suicides, murders, marriages, etc., of which so much is made by Buckle, are only approximately, not absolutely, true. Man is too indeterminate in his action for these predictions ever to become exact, or for that knowledge of his choices conditioning these predictions to be attained.

Second, if history were necessity, we ought to be able to explain the past without the will of man, as we explain the history of the development of the natural world; but we cannot, since there is no one principle upon which all men act, either of selfishness or unselfishness. Besides, man changes with his environment to some extent, and so can never become a constant factor to be depended on in action, as the distance and attraction of the moon.

Third, if history were necessity, the zest of action would be groundless, since the outcome is inevitable, whether we strive or not. If we trust our own consciousness, we cannot help believing in freedom for ourselves, even when we deny it to others. If we deny the validity of consciousness in this particular, we have no ground left for trusting it in any particular. The freedom of man means that he makes history, and is not simply made by it. So far from being necessity,

history thus becomes a synthesis of the will relations of humanity.[1] It is the volition of the race.

Is history simply a chronicle of facts, even of willed facts? Is it only a phenomenal affair with no meaning behind it? Hegel has put meaning into history for us, and has elevated it from the plane of the empirical to the rational. To Hegel history is theophany, is the mode of manifestation of the mind of God in the life of man, is the dramatization of truth, — the enactment in the world, as on a stage, of the inward truth of things. It is the process whereby potential truth becomes actual truth, and is a revelation of the real nature of humanity. In this sense it is true that the will of the people may be the will of God. Without the assumption of an immanent Mind, all things — Nature, man, and his history — are meaningless. With this assumption, all things are shot through with infinite meaning, and life is the process of its interpretation. The race is working out its salvation with fear and trembling, for it is God that worketh in it both to will and to do of His good pleasure. To him who admits this deeper meaning in things than appears, history is indeed philosophy teaching by example.

What is the truth of truths which the history of the race seems to reveal? Such a question must be answered only by a wide induction, not by *a priori* speculation. As Hegel, with master intellect, has pointed out, history is a record of a certain kind of progress in self-consciousness, — an increasing reali-

[1] Cf. Münsterberg, "Psychology and Life," Essay, "Psychology and History."

zation of man as a free being. In the East there are none free but one, — the despot, the sultan. In Greece some are free, but the most are not; the thirty thousand Athenian citizens are free, but the hundred thousand slaves are not free. In the West, with the Anglo-Saxon race, arose the consciousness that all are free; man as man is free. Freedom means dependence on self, independence, and not dependence on another. Freedom is not the absence of law, but conformity to righteous law. Freedom in society is not anarchy, — the absence of rule, — but is righteous self-rule. Freedom, whether individual or national, is the consciousness of one's self as the source of one's law. The realization of the idea of freedom is the movement of history, willed into being by the actors on the world stage. Freedom is the volition of the race concerning its own destiny. It is because the race has given its life for this beneficent idea that man is subtly attracted by this sacred word. The indwelling divinity that shapes the ends of human living appointed freedom, as it would appear, to be the goal of human progress, and history is essentially the record of the process whereby this freedom has been attained. This apocalyptic conception of history is inconsistent with that theory of special Providence which sees God in some events, but not in others, but is identical with that theory of general Providence which sees the whole upward progress of civilization as the will of God expressing itself through the will of man.

Is History a Science?

The question is sometimes mooted as to whether history is a science. We have seen what history is.

But what is science? One means by a science, usually, following the familiar definition of Herbert Spencer, classified knowledge. Some modern thinkers like to add to this definition the element of verification. Science is thus classified and verifiable knowledge. It is evident that history, as a written record containing classified and verifiable knowledge concerning the past activity of man, may be called a science.

But the question, Is history a science? means to imply, also, Is it a natural science? Now the knowledge of nature is the knowledge of determined, not self-determined, facts. The atoms and the molecules, the sun and the stars, act lawfully, but do not choose the law of their action. The deeds of society, on the other hand, are consequences of volitions. Men have determined themselves, unlike the moon and earth, to obey or disobey the law of their own being. Usually feelings, passions, and prejudices, have influenced the decisions of historic actors. The historian can never be sure of the motives that led to the deeds he describes. This elusive element in the historic record of past action is a consequence of the self-determining character of the makers of history. And this same quality of self-direction in men also makes future history unpredictable. The astronomer can describe the eclipses of sun and moon from now till doomsday, whereas the historian, at best, can write only current, not future, history. In the light of these facts we may safely conclude that history is not a natural science. Nor do the apparent predictions of Buckle and modern sociologists as to

the number of murders, suicides, and marriages that are to come disturb this conclusion, since, after all, they are but approximate, not exact. The possibility of such approximations in predicting future fact lies in the fairly regular uniformity of decision reached by self-determining persons in the presence of similar situations. Thus the nature of the material with which history has to do justifies its place as one of the constituent elements of the volitional environment. It also justifies the division of the curriculum into the three elements, viz., the sciences, the arts, and the volitions.

CHAPTER V

THE SOCIOLOGICAL ASPECT OF EDUCATION
(concluded)

The Nature of Constitutions.

2. CONSTITUTIONS. In so far as nations have acted as nations and expressed their actions in some more or less permanent documents, we have constitutions. A constitution in the volitional life of a nation corresponds to epic poetry in its æsthetic life. Both are national products, but they come from different phases of the nation's life. A constitution is a written document containing the fundamental principles which a nation, or a state, proposes to enact and embody in its national life. "We, the people of the United States, . . . do ordain and establish this Constitution. . . ." The word *constitution* means structure; the constitution of a nation is the structure of that nation, showing the elements of which the national life is composed.

A constitution is a growth; it is the flowering of the national life, the profoundest expression of the life of a nation acting as one. The deep principles of a nation's being find voice in its constitution. The thought of a nation concerning its own life and purpose is willed into reality in its constitution. Thus real constitutions are not artificial documents foisted upon a people by agitators but are the people's voli-

tional expression of their own nature and destiny. The framers of serviceable constitutions are interpreters of national life, they are not makers *de novo* of human society.

If the written constitution is a real description of the nature of a nation, being false to it is a kind of national suicide. The only justification that a nation can have for changing its constitution is that its constitution is no longer an expression of its life. Its life has grown since the establishment of the constitution and so demands a new expression. A nation that is really alive and growing will from necessity at intervals of time consider modifications and amendments to its constitution. The constitution of a nation is like the creed of a church, it is the acceptable interpretation of its life at a particular time. To revise each under the strain put upon it by an inward expanding life is a hopeful sign of progress. In its revised constitution the nation wills for itself a future truer to its nature and wider in scope.

The Nature of Law.

3. Law. The third element in the volitional environment of the pupil is law. In so far as society acts we have what is called law. The will of society concerning the welfare of its members is law. The volition of society as law corresponds to the expression of its æsthetic life in the drama.

Law is the rule of human action, established by an authority able to enforce its will. Without the power to execute, legislation is useless. Law in its original intent is what is laid down ; law lays down the acts that must and must not be done by the members of society in order to preserve the unity of society.

Law is not the volition of an act which society has already done, but which society must do. In this respect law differs from constitutions. The latter are an expression of an actual, as law of a desirable, condition.

Law is inherited, or made by the representatives of society. The former is Common Law, founded in long usage and the decisions of the courts of justice. The latter is Statute Law, drawn out in form, and distinctly enacted and proclaimed. Society enforces law for its own self-preservation, and to insure rights of life, limb, and property to its members.

The making and the enforcing of law is supposed to be according to the idea of justice, *suum cuique*. Thus laws are intended to be equitable, to the violations of which penalties are fixed.

The science which has to do with constitutions and laws is political science. As the sciences have corresponding applied arts, as the arts have basic sciences, so the volitions have their sciences also. Here again is shown the unity of the products of the human mind.

The Nature of Morality.

4. A nation, society, and the individual act. The volition of the individual in the presence of right and wrong is morality, the fourth division of the volitional environment. It corresponds to lyric poetry in the æsthetic sphere. We have now the action of the individual in accord with the personal sense of right and duty. It is no longer a question of national or social, but of individual action. Here is a sphere in which the individual man is the maker and follower or the violator of his own enactments. Moral law is self-

legislated law. The following of an alien law which the will of the individual does not confirm is not morality.

Morality is enforced by that constitution of things whereby evil is self-destructive and good is self-preservative. The word of evil is, "I am the spirit that continually denies." The evil-doer is a self-destroyer. Good, as against evil, is self-preservative. Plato[1] showed that the idea of the good is the principle of existence. The constitution of things whereby evil is suicidal and good self-conserving is the greatest sanction which morality possesses.

The individual whose life is conserved has the sense of the righteousness of the principles upon which he acts. When the birth of the moral law in self-consciousness has once taken place, the tendency is strong to conceive of that law as approved by the Ideal Person, and so the moral law is thought of as the gift of God. At this point Kant thinks morality ends and religion begins. To him religion is the feeling of the moral law as the command of God. In morality a man stands in relation to a self-legislated law; in religion, man stands in relation to the Giver of the law.

Ethics is the science underlying morality. Ethics as a science is impossible without the consciousness of will. Socrates did not clearly have the consciousness of will when he taught that knowledge is virtue. A knowledge of the nature of volition would have indicated that man may know what is right and do what is wrong. Knowledge is not virtue, but is the means to virtue. Virtue is voluntary action according

[1] "Republic," Book 508, E.

to the knowledge of the right. "I see and approve the better, but follow the worse," is a familiar fact of Roman and modern consciousness. The problem of the will of man first came clearly into consciousness with St. Augustine. And under the influence of Christianity, with its doctrine of man as having a soul to save, ethics has had its greatest development.

The Educational Value of the Volitions.

Thus we see the nature of the volitional environment of the child. It remains to inquire what advantages accrue from its having a place in the curriculum. Why should a child be adjusted to the volitional (that is *practical*) element in the social environment?

(1) The child thus becomes conscious that man is, and acts as, a part of a social whole. The movements of history are the movements of men, not of man. Even a king, without his subjects, is impotent. Individualism dies the death from the historic point of view. Witness the French Revolution; society cannot exist where the hand of every man is against his brother.

(2) The child thus learns that the social whole is composed of individuals, that *L'état c'est moi* is a libel against the French people. The state is not Louis XIV. The Czar of Russia is not Russia. Universalism, that is, the will of one individual or the will of an institution as supreme, also dies the death. Witness the subjugation of the individual in the East to the caste system, and in China to the idea of the family.

In short, the child learns the individual is a *Gliedganzes*, a part-whole. The individual is a whole

and he is also a part of a larger whole. It is the nature of an individual to be both himself and a *socius*. Individuality is not a narrowly circumscribed sphere, but is a large circle inclusive of one's fellows. The individual really finds his own unity in the service he can render to many selves. Society itself is a unity, through variety. It approaches the conception of an organism, in which every part is both means and end to every other part. A member of society is both an end in himself and a means whereby larger social ends are attained. An organism, whether it be the body of a person or the figurative body of society, is not an individual thing, but a unity of coöperant parts. What the individual cell is to the whole bodily organism, that, in a figure, is the whole person to society. "In history we see how little selves, or individuals, unite to form the big self, or the nation." [1]

(3) The child sees the institutions that his race with its life has made, and to which, as his own producer, he owes loyal allegiance, viz., the home, the school, the civic life, the state, and the church. What President Butler calls the institutional sense is awakened.

(4) The child learns in history the essential facts of human achievement, — those facts that have made present life and thought possible, and which a liberally educated man cannot afford not to know.

(5) The pupil's mind is trained to judge through the interpretation of the facts of history supplied by the memory and quickened by the imagination. The training of the judgment is history's great educational

[1] Harris, "Psychologic Foundations of Education," p. 331.

value. The finest result of a trained mind is the ability to judge. But memory must carry the facts of history by means of their logical continuity. And through what Macaulay describes as the "historic imagination" the pupil must re-live the scenes of the past. In teaching history the use of the imagination in picturing foreign lives develops an interest in all humanity. And without a developed imagination we are blind in estimating the inward values of the lives of primitive and foreign peoples.

(6) The study of history and of the whole volitional environment of the child has the practical value of fitting youth for citizenship in a self-governing community. It fits for citizenship by developing the historic mind, which, without the power of prediction, can yet interpret the present by the past, and whose foresight is insight. The teaching of history assists in reaching the goal for which the public school system was instituted, namely, to fit youth for life. Men are too widely ignorant of the methods and principles of government. The knowledge of history, given the deductive power, tends to make a man capable in national affairs.

(7) As the portrayal of the motives of so many men and their consequent careers and end, the practical element in the social environment is a great moral teacher of the pupil, and, apart from the example of respected individuals, and intellectual habits, is the greatest influence in the formation of character. Character is the product of the will, the embodiment of will relations; character is what a man is in consequence of what he wills to be. The moral charac-

ter of the individual and his will as its basis are trained through acquaintanceship with what the will of the race has done.

Thus we see the reasons that justify the place of the volitions in the educative curriculum, and herewith is ended our account of the reproductive aspect of education. Before passing to the other sociological aspects of education, let us gather up and unify our thoughts, so far as they have been concerned with the nature of education as repeating in the mind of the individual the mental products of the race. The following general observations may be made on the reproductive aspect of education: —

Observations on Education as Reproducing Racial Experience.

(1) These three elements, viz., the theoretic, the æsthetic, and the volitional, that together constitute the social environment of man, are the products, and the only products, of the race's mental life. The mind of the race is the mind of the individual writ large. The divisions of the spiritual environment as given are complete, since based upon the nature of the mind that produces that environment.

(2) What has been here termed the spiritual environment of the pupil is identical with the educational curriculum. The courses of study offered by the school, which men call the curriculum, is neither an invention of some genius nor the discovery of some explorer; it is the accumulated racial experience, the product of human society as a whole living its life in its world. The curriculum of the pupil is the career of human progress. The books he studies are not the reality; they are but the temporary earthen

vessels in which the treasures of natural and human truth are kept.

(3) The educated man, so far as he is educated, has reproduced his race's achievements in his own mind, and so has identified his own thinking, feeling, and acting with that of his race. Thus education socializes and humanizes the prospective members of society.

(4) The essential foundation of education must always include representatives of each of the three great elements of racial achievement; that is to say, in every curriculum, indeed in every adequate course of study pursued by the individual pupil, there must be some science, some art, and some volition. A good prescribed basis for any education that aims to be broad and rounded would perhaps include the following subjects, viz., physics, the science of matter, the typical inorganic science, acquainting man with his natural world; biology, the science of life, the typical organic science, acquainting man with his living world; psychology, the science of mind, the typical mental science, acquainting man with his own and his fellows' minds; mathematics, the science of number and quantity, acquainting man with the tools wherewith to express his mastery of his world; grammar, the science of language, the door to literature. Of these last two subjects Mommsen writes: "The art of measuring brings the world into subjection to man; the art of writing prevents his knowledge from perishing along with himself: together they make him — what Nature has not made him — all-powerful and eternal." To this list of sciences

would be added from the arts, doubtless, literature, as the most accessible of the arts, language alone being the necessary preparation, and also as perhaps the most serviceable educationally. To these sciences and arts must be added history, as the most usable form of expression of the human will. An educational foundation laid in these studies is sufficiently stable and broad to support any later superstructure in the form of electives or professional training. These, or equally representative studies, cannot in wisdom be omitted from any plan of culture. Yet, when this is said, it must also be always added that a liberal education is rather an attitude of mind than a knowledge of courses. Not what enters the mind, but what comes out of it, betokens liberality of training. These are simply the courses of study that would seem most easily to secure the desired attitude of mind.

It is interesting to compare with these seven subjects the so-called seven liberal arts of the Middle Age curriculum, viz., grammar, logic, rhetoric, arithmetic, geometry, astronomy, and music. These two curricula differ from each other as mediæval and modern life. The one is formal, fitting for verbal disputations; the other is real, fitting for social service. To the mediæval life the modern world has added progress in science, indicating that man is now a citizen of earth as well as of heaven. The modern life, beginning with the Renascence, has also been conscious of the continuity of human development as revealed in history. So the modern curriculum, as the effect and cause of modern life, has added to the

mediæval curriculum the subjects of natural science and history.

(5) After the foundation of education is laid in these sufficient and representative subjects, it is evident from the magnitude of the human achievement that necessity is laid upon managers of education to provide a selection of studies for the superstructure. The sum total of human knowledge, art, and history is so great that some form of the elective system is unavoidable. It would take a man a lifetime to pursue all the courses offered by a single modern great university. The best curriculum is not the prescribed, which denies to the individual the freedom of choosing the subject-matter wherein he will develop himself, and tends to rid him of that sense of responsibility through which alone strength comes. Neither is the best curriculum the free elective, which permits superficial scattering and the omission of one or two of the three great elements of human achievement, viz., science, art, and volition. But the best curriculum combines the principles of prescription and freedom in a system of study wherein no great body of human activity is omitted while at the same time the student does thorough-going systematic work somewhere. Thus both breadth and depth are received; both narrowness and superficiality are avoided. Narrowness was the vice of the old prescribed system; superficiality is the vice of the free elective system. Thorough discipline was the virtue of the old prescribed system; freedom of self-expression is the virtue of the free elective system. The best system keeps the virtues and omits the vices of

the two others. This is the so-called "group" system, which represents our contemporary collegiate educational progress. In this system the curriculum which represents the student's spiritual environment is divided usually, according to its nature, into three groups of studies, viz., the sciences, the languages and literatures, and history, etc., corresponding in general to the elements of the environment as previously defined. The student must put his major strength in one of these groups, chosen by himself, and divide his minor strength between each of the other two. Within the group his choice is conditioned only by the nature of the courses themselves. Herein is opportunity afforded for the student to study thoroughly what he prefers, to the neglect of nothing essential for liberal culture. This group system represents the natural progress of the elective principle out of perfect freedom into that freedom within safe limits which characterizes all things human as well as educational.[1]

The necessary presence of some form of the elective system in a modern curriculum indicates that the educated man is not he who has appreciated all beauty, willed all goodness, known all truth, but enough of these necessary things has he compassed to open his life to the message they have to give. The educated man does not know everything, but rather how and where to find anything; he is not an encyclopædia possessing all knowledge in storage, but a powerful mind possessing a certain adequate method in the

[1] The "group" system exists to-day in Yale, Leland Stanford Jr., the University of California, Dartmouth, and Williams.

attainment of knowledge. An educated man strives to know everything about something and something about most things. Some truth he knows, and to all truth he is open. Striving to be an expert himself in some matters, he has faith in the opinion of other experts. Thus education is not so much an attainment as an attitude, not so much an achievement as a spirit.

Third Definition of Education.

We have now defined the nature of the racial environment, in the adjustment to which, by mentally reproducing it, consists the education of the child from the sociological point of view. And so we are prepared to add this new element to the definition of education reached at the end of the preceding discussion; and with this result, *Education is the superior adjustment to his intellectual, emotional, and volitional environment of a physically developed conscious human being.*

Our growing definition of the conception of education is becoming clumsy, but perhaps it is also becoming more comprehensive and more adequate to the complex subject it would define. To this, our empirical conception of education, there remains but one element to add, viz., the psychological. Before passing into that territory, however, we must face the two remaining questions of this present sociological inquiry, viz., What are the social effects of reproducing in educational institutions the spiritual environment of the race? and, What practical consequences follow for education from this sociological aspect of the discussion?

Social Effects of Education.

To take the first question, there are three effects upon society of having its members educated, that is,

reproduce their racial heritage. These effects are: (1) the conservation of the past; (2) the preservation of the present; and (3) the progress of the future. Education conserves, preserves, and produces. It is evident that here we shall find the social justification, indeed, the social necessity, of educational endeavor. Let us give brief attention to each of these effects.

The Conservative Effect of Education.

1. The conservative effect of education. Education conserves the advances of the race, so that past life was not lived in vain. The fragments of past achievements and experience are gathered up that nothing be lost. Other men labored and the educated man enters into their labors. Having reproduced in large outline a portion of the race's work, the educated man begins the work of the world where the race before him has left it; he takes up and bears forward the burden of progress which his forbears have laid down with their lives. The growth of human civilization is like the upward mounting of the coral reef in the midst of the sea, — each worker rises upon the shoulders of his predecessors.

By conserving and using the past, education becomes the guardian of civilization, the transmitter of its products, the keeper of its heirlooms, the treasure-house of its priceless heritages. But for it, each man entering the world would find the house of knowledge empty, would have to begin his work at the origin of the sciences, the arts, and the volitions, instead of at their present conclusion. If the men of one generation forgot their Greek and lost their books, the learning of it again would be like deciphering the Egyptian hieroglyph or the Babylonian cunei-

form. If the men of one generation forgot their science and lost their books, the work of the race, of Ptolemy and Copernicus, would have to be repeated. Destroy the temple of knowledge which was forty centuries in building, and only divine power could raise it again in three days.

Beside this far-reaching conception of education as the great conservation of human society, how paltry and unworthy the notion that the scholar is a negligible factor in modern progress! Rather does education make possible the taking of one's place in the continuity of the best life of the race. It preserves the past as the basis upon which to build the more stately mansions of human welfare.

As Professor Dewey has so freshly expressed it: "All that society has accomplished for itself it puts, through the agency of the school, at the disposal of its future members. All its better thoughts of itself it hopes to realize through the new possibilities thus opened to its future self."[1]

The Preservation of the Present.

2. The preservation of the present. Education protects society. This it does by developing self-control in the individual members of society and by binding their affections to the human institutions and to law and order. He who has reproduced the racial attainments in his own conscious development appreciates their nature and value. He who knows himself to be the recipient of the racial possessions feels himself committed to keeping them. It were a kind of parenticide for an educated man to attack the institutions of society whose life he bears in mind and body.

[1] John Dewey, "The School and Society," p. 19.

There are three considerations that will serve to emphasize this protective aspect of education, viz., the founders of society have recognized it, the influence of education on crime shows it, and society as a would-be organism demands it. To take separately and briefly each of these considerations.

The Attitude toward Education of Founders of Societies.

And first, how the framers and reformers of human societies have regarded education as a protection. Plato's "Republic," the first in time of a long list of Utopias and among the best, is also the first scientific treatise on education, and Dr. W. H. Payne has paid it the tribute of classing it with Rousseau's "Émile" and Spencer's "Education" as the three best discussions in all literature on the subject. In the "Republic" it is by education that the ideal society once established is to be maintained, and the paradox is announced that philosophers are to be kings. The philosopher was the *beau ideal* of Plato's system of education.

Following the Reformation, there was a great revival of interest in the common schools. When it was judged by Luther and his followers that men must save themselves religiously by the exercise of faith and private judgment after the reading and study of the Bible, it was necessary that men must be educated to read, study, and think. Without education, the new element of individual liberty projected into human society could not have maintained itself.

Our third illustration shall be America. In his fond Farewell Address to the people of his country, Washington used the winged words now known to all, "In proportion as the structure of a government

gives force to public opinion, it is essential that public opinion be enlightened." And the author of the Declaration of Independence, in a letter to Washington dated January 4, 1786, then wrote, "It is an axiom in my mind, that our liberty can never be safe but in the hands of the people themselves, and that, too, of the people with a certain degree of instruction."[1]

Emerson said, "America means opportunity." The individual citizen by the right of suffrage at the polls determines national principles and policies. For the safe exercise of this mighty prerogative, enlightenment is the necessary prerequisite. "We must educate the masses because they are our masters." "The citizen is king and the ballot is his sceptre." In a republican form of government, the illiterate are ciphers or the opportunity of the unprincipled. The school unites with the library in the message, "The commonwealth requires the education of her people as the safeguard of order and liberty."

In these modern days no one more pointedly than the president of Harvard has described "The Function of Education in Democratic Society" and urged it upon our attention. "Moreover," he writes, "the fundamental object of democratic education — to lift the whole population to a higher plane of intelligence, conduct, and happiness — has not yet been perfectly apprehended even in the United States."[2]

Education and Crime.

Secondly, the influence of education on crime shows the preservative and protective social effects of

[1] Henderson, "Jefferson on Public Education," p. 312.
[2] C. W. Eliot, "Educational Reform," p. 403.

education. Crime is conduct which the state disapproves and penalizes. Its origin when analyzed seems to inhere partly in the will of man, largely in his physiological constitution in the form of inherited criminal tendencies, and mainly in the influence of contaminating environment. Ignorance does not seem to be a direct cause of criminal inclination; rather are ignorance and crime joint products of defective initiative, weak inheritance, and hard environment.

It is evident that, since ignorance is not the immediate cause of crime, education, in so far as it banishes ignorance, cannot directly banish crime. Where education only succeeds in banishing ignorance, it becomes often a weapon for social attack instead of social defence.

There are three ways in which education can cope, and increasingly is coping, with crime in society. These ways correspond to the three sources of crime as just stated. First, by reaching the feelings and the will of man, as well as his intellect, refining the one and strengthening the other, so that crime in the one case becomes repulsive and in the other conquerable. Just how education can work partially these changes in disposition is a psychological question, whose discussion we must postpone till the succeeding chapter. And the right intellectual point of view of society which makes attack upon it difficult is partially secured in so far as the curriculum brings the student into the consciousness of his unity with his fellows. The mental reproduction of the racial achievements is a socializing process.

Second, inherited criminal tendencies are being dealt with early in life while the organism is plastic. They are being thwarted by the development of counter social impulses in two influential school agencies, viz., the kindergarten and manual training. The kindergarten idea is the rationalization of play, thereby developing the communal sense. Through the securing of desirable reactions on correct social stimuli, correct social feelings and virtues are developed. The evil innate tendencies are overcome with good disclosed tendencies. An embryonic criminal can be saved to himself and society before the age of six when he might not be at nine.

The manual training school is a second great new way for dealing with inherited criminal impulses. He whose nature leads him to destroy is taught to produce. The rough wood, yielding to the movements of hand and tool, teaches the fact and the force of honesty and accuracy. The reformatories for youth have been quick to utilize this moral value in manual training.

Let us not be forgetful, either, of the educational agency of athletics in suppressing criminal physiological inclination. By muscular exercise manly virtues are grown to supplant weak tendencies. Health, and the love of it ; a sound physique, and a respect for it, — these make immorality and vice difficult.

Third, the forces of an environment hostile to the best interests of man, which are the main source, after all, of crime, are being dealt with in many ways by the influences that education disengages. The hold of crime on the individual member of society

must continually tend to decrease as his environment makes crime increasingly difficult. As educational influences get possession of the environment of man, that environment offers less opportunity to crime. Among the influences that hamper crime, set free by education in the environment, are to be noted the illumination of our cities; the skilled methods of detecting crime by photography, electricity, chemistry, thumb-impressions, etc.; the better administration of justice, tending in young and old to reform, and not to harden; prison reform, probationary sentences, humaner punishments, the regulation of the saloon, and the growing public sentiment against crime as unsocial. Through these and similar social checks, the indirect influence of education in diminishing crime is greater than its direct.

The evidence of statistics on the question of education and crime is uncertain. In 1892 Proal showed that advance in education did not necessarily mean a diminution of crime. Most statisticians seem to think that crime is increasing. The fact probably is that the number of offences is increasing, due to the multiplication of minor ordinances, while the disposition to commit immoral crime is doubtless decreasing. On this point Professor Falkner writes:[1] "Crime in the broadest sense, including all offenses punished by law, has probably increased slightly in the last twenty-five years. On the other hand, crime in its deeper moral sense, as we are apt to picture it, has greatly decreased. Changes in our environment, not changes in our moral standards, have multiplied minor offences.

[1] *Forum*, July, 1900, "Is Crime Increasing?"

The increase of crime which our modern life reveals is thus a social and not a moral phenomenon."

Putting these things about education and crime together, we may say that education, in so far as it succeeds in socializing the individual, in moralizing his will, in cleansing his nervous system of the evil taint of heredity, and in providing an environment conducive to law and order, is tending to diminish crime, and thus discloses its protective effect in human society.

Educational Supply and Social Demand.

Our third consideration mentioned above, to show the protective character of education, was the demand made upon the school by society, as a would-be organism, for protection. As Kant has taught us to think, an organism is such an assemblage of parts that each part is both means and end to every other part. The human body is such an organism. It is evident that the body politic, with all its present strife, dissension, and discord, is not as yet an organism. Its members war against each other. Its diversity of parts is so great that no harmonious unity appears. And yet the forces that civilize are unifying. Society holds before itself as the limit of its progress a unified whole of coöperant parts.

During the slow progress of society toward this, its ultimate and natural goal, internal needs are developed. The school exists for the discovery and the satisfaction of those needs. In its dire want, society's instinct of self-preservation leads it to turn to the school for succor and protection. In Germany, after the devastation wrought by Napoleon, this instinct of self-preservation in society, leading it to lay hold on

the school for assistance, found a voice in Fichte, crying that in the foundation of universities and schools the desired regeneration of society could be effected.

Continually before our eyes is the spectacle of a changing curriculum. It means that society, as it grows, is ever developing new needs, and the school is ever hastening to meet them. Society felt its need from of old of lawyers, doctors, and ministers, and the school had its three faculties of law, medicine, and theology. In modern times society has discovered its need of the business man, the trained teacher, the mechanic, and the engineer, and quickly have corresponding educational supplies been established. Society gives its positions of responsibility and power to the expert; education trains the expert and teaches men to trust him. Those who have to do with directing educational institutions are the first to recognize that it is for society to demand and for them to supply. As Professor Dewey says,[1] "The modification going on in the method and curriculum of education is as much a product of the changed social situation, and as much an effort to meet the needs of the new society that is forming, as are changes in modes of industry and commerce." And similarly President Eliot wrote earlier,[2] "The university must accommodate itself promptly to significant changes in the character of the people for whom it exists."

Education is thus a matter of social effectiveness. It protects society from suffering want. "Education

[1] "The School and Society," p. 20.

[2] "Educational Reform," p. 35.

is the instinctive effort which the social body makes to adapt itself to vital needs. . . . A right habit of mind becomes, then, no mere accomplishment or grace; it is a condition of continued national activity."[1] This adaptive effort on the part of the social organism is exerted chiefly upon its still growing tissue, upon its younger members in school, who are plastic and susceptible to vital change.

Remembering what has now been said about the importance accorded to education by the founders of human societies, about the influence of education on crime, and about education's supply to society's demand, we have before us the notion of education as the preservation of the present.

Future Progress.

3. The progress of the future. This is the third social effect of education. Here it is that education passes out of the service of conserving and protecting into that of actively initiating. Society needs aggressive leaders as well as wise protectors and cautious saviours. Education does well to reproduce, and by reproducing to conserve the past; it does well to protect the past in the present; it does best of all in adding to the present accumulation of knowledge and power, thus making possible a future better than the past. This is progress indeed. The form of progress we have already seen to be through disintegration into unity. Its content we have now to define as advancement in the knowledge of men and things, in the use of such knowledge in directing the powers of nature and in the relief of the estate of man, and,

[1] Withers, *Contemporary Review*, June, 1900, "New Authorities in English Education."

finally, in the enjoyment of such knowledge and its use. In brief, progress is the increasing self-possession of the race in its world. Among the many kinds of men that make this progress possible are to be found the scholars.

There are two general disciplines constituting the educational curriculum that represent respectively the conservative and the progressive tendencies, viz., the humanities and the sciences. The historians and the linguists are by training cautious; the scientists, daring. In those countries, like China and India, where science has gained no foothold, little or no progress is found. The progress of the West, in contrast, is bound up with science.

It is the application of the knowledge of the scientist that has given us our modern world of comfort, convenience, and monumental productivity. A leading contemporary,[1] in an editorial expression on "The University as a Wealth Producer," thus conjoins education and commercial progress: "Men must take nature into partnership in order to succeed in large undertakings; and the interpreters of nature are the scientists. It is they who put the great manufacturers, organizers, and captains of industry in touch with the forces that produce wealth; and the university is at the heart of the great modern movement of production."

Progress in knowledge of whatever kind must always come only from him who is already familiar with what has been done in his field. In our universities scholars become abreast of their fields, they thus

[1] *The Outlook*, March 15, 1902.

know where to begin original work, and so human knowledge grows.

Likewise, in the making of history, it takes a man of knowledge and of power to achieve these things that are both new and good. The legislator must come more and more to wait for and consider the word of the historian and the sociologist. The scholar himself in politics is a growing figure in modern times. Let it grow!

It seems to be less true in art than in either science or history that an educated man is necessary for progress. There are certain presuppositions in each art, of course, which the artist must know. These are matters of technique. Knowing these, the artist brings a great deal of his law with him. Production in art seems subject to no definable law. The artist simply expresses himself, in material terms, for the most part as he will. The great demand laid upon him is that he have a self to express: that is, that he be original. Progress in art does not come from the imitators, but from the originators. Education has nothing to do with creating originality. It can only develop it, and supply it with its tools.

To show the secondary place of education in the advancement of the arts, the common names of the arts and artists will suffice. The poet, for example, is, literally, *a maker*. A common thought of the Divine Being is, the Maker. Therefore the poet has always been considered, in a way, divine, subject to the influence of the *divinus afflatus*. Music, for example again, is literally "belonging to the Muses"; in its Greek original it referred to all the arts, now

limited to the art of tones alone. The musician must conform to the law of tones, but the expression of self that he puts into it is original, as though the Muse had inspired him. As an artist, man is most divine. In art we have the work of the productive imagination; the artist combining old past experiences in new forms. Some think of an infinite mind as being able to bring things into existence. The finite artist's mind can combine the old elements in new shapes.

Because of the original element in art, one cannot say that education makes art possible. One can only say that education facilitates advancement in the arts. The forms of his art education can give; the life of his art is what the man puts into it himself.

One statistical fact will illustrate how education provides society with men who can do substantial things. An investigation carried on some time ago by President Thwing [1] of Western Reserve University showed that one out of every forty graduates as against one out of every ten thousand non-graduates of the entire population reached a degree of distinction sufficient to give them a place in Appleton's "Cyclopædia of Biography," a proportion in favor of the college man by two hundred and fifty to one.

Having now defined the nature of the spiritual environment of man and seen what the social effects of its reproduction are, it only remains to consider the third question of this chapter, viz., What practical consequences follow for education from this sociological aspect of the general discussion. To these we now come.

[1] Cf. Harris, "Psychologic Foundations of Education," p. 338, note.

Practical Consequences for Education.

(1) It is evident from what has preceded that the school as an institution is not a question simply of teacher and pupil, but of society and its members. Education is one of the functions of society. Commenting on a recent educational text, Professor Hanus writes:[1] "Education is primarily a social study like economics or government. The development of the individual is fruitless unless it proceeds with constant reference to his membership in the contemporary social organism, and the maintenance, organization, and direction of education constitute one of the most important functions of society."

President Butler recently said, "As the century closes, the soundest educational philosophy the world over teaches that the individual alone is nothing, but that the individual as a member of society and of a race is everything."

Professor Natorp likewise sees the innermost heart of education in the training of the will as conditioned by the life of a community, and, again, as conditioning that life.

Indeed, it may be said with justice that the right kind of education is society's greatest and gravest problem, for in the last analysis the school is society shaping itself to its future ends.

(2) The best society and the largest development of the individual are really at one, since the largest individual is really the best aid to society. President Eliot says:[2] "For the individual, concentration and

[1] *Science*, June 29, 1900, reviewing Welton, "The Logical Bases of Education."

[2] "Educational Reform," p. 13.

the highest development of his own peculiar faculty, is the only prudence. But for the state, it is variety, not uniformity, of intellectual product, which is needful."

(3) The school must emphasize its *coöperative* and not its *individualistic* methods, if it would best prepare its pupils for life in society. The accusation against the school has been that the educated man is unfit to live with his fellows or to help them, but fit only for the study of books. "Many people draw a distinction between an educated and a practical man; but true education is, after all, nothing but systematic study and practice under guidance." The school must quicken the social sense. This it can do by the use of such means as tramping parties, excursions, school exercises, team work in athletics, the study of men in common by visiting shops and business houses, the study of nature in common, in geographical and geological expeditions, etc. "Preparation for life is participation in life."

(4) The school must understand that its main material, books, are poor substitutes for experience; that truth is life and not a knowledge of books; that we learn from books really only when their contents are interpreted by life and experience. Books interpret and expand experience, but they do not supply it. Books are artificial, life is real. Professor Dewey tells of some children in Moline, on the banks of the Mississippi, who were surprised to learn that the Mississippi River of their geography had anything to do with the river running past their doors.

(5) The child must see in his daily occupation something of eternal and human significance. Since each thing is a part of all things, it bears part of the significance of all. If he is studying, he is really repeating in his own consciousness past or present life. If he is working, he is contributing to the needs of the social whole. To gain the sense of the value and dignity of the daily routine requires imagination and insight.

(6) Parents should make the pupils feel that home and school are working in alliance. The school is a necessary extension of the idea and influence of the home. What every parent begins by doing in the home but cannot continue, that the school completes. In a notable article on "School Reform," Professor Münsterberg[1] insists on this copartnership of home and school as the present needed school reform, second in importance only to securing teachers who know their subjects.

(7) The school should supply to the pupil what the society which he will enter needs. Now, human societies differ with the races that form them. The needs of the different races of the human family are not identical. Where education is concerned with different races, the first question is, What are the needs and capacities of this race? The second question is, What culture material ought the curriculum to provide that will best meet this race's needs and develop this race's capacities? Only in barest outline is human nature the same the world over. There must be an adaptation of educational material to

[1] *Atlantic Monthly*, May, 1900.

racial nature. Each race should have developed through its education those traits which are nature's characteristic gift to it. Thus human society gains the strength of a diversity of gifts, and avoids the weakness of uniformity. You cannot make a good Filipino, or a good African, by supplying an education that would make a good Anglo-Saxon.

Herewith is completed the long account of the process whereby the social nature of the being to be educated is developed through mentally re-living the race's life. We have seen the nature of that environment through adjustment to which man is educated, the effects for society of such adjustment, and the practical consequences that follow for educators from this sociological discussion. But our pupil, upon whose nature depended the nature of education, which we are seeking to define, was characterized by yet another possession. The life embodied in physical form, and living in conjunction with other life, is directed by intelligence. Our pupil is an individual consciousness, in addition to his other characteristics. Perhaps he is this essentially. But this very individual it is whom our preceding discussions have not specifically considered. We shall want to know what the effect upon the individual mind is of repeating its race's experience, of learning something of its science, of enjoying something of its beauty, and of living through its movements. But psychology is the science of the mind, and to answer our question we must turn next to the psychological aspect of education.

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CHAPTER VI

THE PSYCHOLOGICAL ASPECT OF EDUCATION

THE characteristic of the pupil which remains to be considered is intelligence; and the question that remains to be answered is, What is the effect upon the maturing intelligence of working through the racial attainment? The consideration of these matters constitutes the psychological aspect of education. Since it is the individual after all, and not society as a whole, that is really being educated, it is apparent that this psychological inquiry is closer to the nature of education than any of the preceding discussions.

Education, psychologically considered.

What is the effect upon the individual mind of reproducing its social inheritance? To answer, it must be remembered that mental reproduction is mental activity, and that mental activity means mental growth. The individual mind that works its way through what the race has worked out in consequence grows. In possessing and assimilating its spiritual environment, the mind is quickened, and expands out of its potentiality into its true nature. Through participation in the life of the race the mind of the individual finds its real self, develops its natural powers. Through the educational process every mind builds its own world, conquers its own environment, and thereby realizes its own capacity. In brief, the psychological effect upon the mind of repeating its race's

experience is the development of its potential powers into actuality. Education, psychologically considered, is mental development. When the significance of this statement becomes clear in the following discussion, we shall then have yet another essential element to add to our definition of the nature of education.

The Three Questions of this Inquiry.

Having touched here upon the heart of our empirical inquiry concerning the conception of education, we must attempt to justify and give meaning to the observations just made. This can be done by considering the three following questions that arise out of our introductory statements above, viz.: What is the nature of that activity of mind whereby it develops? What is the nature of that development which takes place in mind through its activity? And what are the characteristics of the developed mind?

The Notion of Self-activity.

To take the first question, it is evident upon introspection that the mind's activity in getting and assimilating its spiritual inheritance is its own. The mind is the source of its own reactions upon its world. Having power within itself, the mind commands this power upon occasion; it sets itself to work. Such activity is properly described as self-activity. This principle of self-activity in consciousness is the root of all knowledge, feeling, and will. Without the mind's response to its world there is no world. Through the mind's response to its world, all science, art, and action result. This basic power of consciousness whereby it expresses itself and interprets its world is the presupposition of education as viewed by psychology. Without mental activity there is no mental growth.

To define this central notion of self-activity more closely as it discovers itself in consciousness, an illustration may be used. A billiard-ball moves mechanically according to an impact from the outside. A man's mind moves teleologically according to an idea on the inside. A *vis a tergo* moves the ball, a *vis a fronte* moves the mind. The one is the object of impact; the other is the subject of impulses. The one is directed by external forces; the other directs itself. Self-activity, then, as a principle in consciousness, means self-direction. It is the mind's ability to frame and to follow self-appointed goals. "Conscious effort in the evolution of possibilities is termed self-activity." [1] To quote from Dr. Harris, "Self-activity itself we perceive in ourselves by introspection. When we look within, we become aware of free energy which acts as subject and object under the forms of feeling, thought, and volition." [2]

This is self-activity as manifested in consciousness. With its manifestation goes, as a consequence, self-development. The psychological aim of education, viz., to develop the mental self of the pupil, is possible only through the activity of that self. It is a universal law that growth can come only through activity. By using, we gain. The use of capital is interest. The plant's use of natural stimuli enables it to grow. Muscular exercise means muscular development. Just so self-activity is the mode of self-development.

Indeed, one may say the law is not simply uni-

[1] Boyer, "Principles and Practice of Teaching," p. 35.

[2] Harris, "Psychologic Foundations of Education," p. 31.

versal, but is a law of the universe itself, as we know it in time. Since the days of Heraclitus no observation of man has been commoner than that all things change. Modern astronomy, geology, and biology have shown the unity of these changes in one vast system of cosmic development. The changes occur within the whole system of reality beyond which there is nothing to cause change. Manifestly, then, the whole system, as a unity including change, is self-active. The development of the universe in time is conditioned by the principle of self-activity. It is not surprising, then, but natural, that man, the microcosm, reflecting the macrocosm, should find his own self-development only in his own self-activity. "My Father worketh hitherto and I work."

The Insufficiency of Rational Psychology.

From the beginning until now it has been the good service of rational psychology to insist upon self-activity as the central principle in consciousness. This truth is still true; the mind does react by means of its own nature upon the sensuous material presented to it, and upon its own conscious states. But this rationalistic view of the mind is inadequate, not so much because of what it does say as because of what it does not say. This point of view regards the mind as mature, as independent of its material environment, and as individual. It omits to consider the mind as growing through its immaturity into maturity, as conditioned in its manifestations by states of the brain and body, and as reaching its true nature through contact with fellow minds. The rationalistic psychology is not supplanted, but it is to-day supplemented by the genetic, the experimental, and the social.

In the words of Professor Dewey, "Genetic psychology, instead of being set over against rational psychology, thus becomes a necessary instrument for translating the more or less vague, abstract, and nominal propositions of the latter, into concrete and realizable form. Of course we are far enough from an attainment of this ideal but surely this is the point of view from which to regard it. . . . What is most needed in education is, I take it, the connecting links, the intermediate terms lying between the formal general principles and the specific details — a connection which will make the former workable while it illuminates and emancipates the latter. And I do not believe that these connecting links can be found except in a psychology conceived in a somewhat more experimental and less purely rationalistic form than that of Dr. Harris." [1]

The Educational Services of the Newer Psychology.

It is the merit of the newer modes of psychological study to analyze into some detail and define with some care the way in which the principle of self-activity works in growing minds, and also to describe the stages of the mind's natural development. With the former of these services we are now particularly concerned as we continue the answer to the first psychological question concerning the nature of education, viz., What is the nature of that activity of mind whereby it develops? To the latter service we must return in attempting the answer to our second psychological question.

The activity of the self differentiates itself in a

[1] John Dewey, *Educational Review*, Vol. XVI, "Harris's Psychologic Foundations of Education."

number of ways. This differentiation is logical, not psychological, that is, what we concretely find in the growing self is not first a bare principle of self-activity which later separates itself into its parts, but is a number of ways of reacting on its world, all displaying the principle of self-activity. These concrete ways of manifesting its active nature that the self has and whereby it realizes its powers are too many and too familiar to describe in detail. The list includes the appetite for better cognition which we call curiosity; the impulse to originate mentally, which we call invention, and whereby progress is possible; the demand of the æsthetic sense for rhythm, form, color, and the perfect manifestations of the types of life; the tendency of all young minds to do what is socially approved, and so to satisfy the sense of right; the unwillingness to be surpassed by an equal, which we name emulation, and which is responsible for the various forms of competition of the child's world; the instinct to have and to hold what comes within the range of the senses, leading to the sense of ownership; the tendency to avoid all forms of pain and secure the things that give pleasure, which is the instinct of self-preservation; the impulse to make and to break, to build up and to tear down, to put together and to pull apart, so educative of the motor centres, and which has been named the constructive impulse, — all these are familiar and typical ways that the immature mind of the child has of developing itself through its reactive power.

Internal Ways of Mental Development.

From this list we have reserved for fuller consideration, because of their supreme educational importance,

the three factors of imitation, interest, and effort. This trinity of wonderful words, each representing a way in which the self-active mind works out its own growth, almost covers the theoretical part of contemporary educational discussions. They are the bases of our pedagogical orthodoxies and heresies. To defend imitation is likely to bring down upon one's self the demand of the individualists in education that the independence of the pupil must be safeguarded. To defend interest is sure to elicit anathemas from the strenuous duty-lovers. And to defend effort is in the minds of many to identify one's self with an unscientific psychology. Thus the educational house is divided against itself. In the midst of this confusion some are saying there is no truth, what seems so is illusion, and education is not a science. For us there is nothing left to do but to observe again that the child's mind develops itself through imitation, and through interest, and through effort. The truth is not in the part, but in the whole. This is the insight that will keep us from becoming warriors on the inside or sceptics on the outside of the educational house. From this point of view the difficulty of our discussion is in remanding each of these three agencies back to the sphere of its legitimate operation in the large field of mental development.

Three Additional Agencies of Mental Development.

And first, imitation. The discovery of the influence of imitation in individual and social development is modern. It could not be detected so long as men held only individualistic preconceptions of society. This discovery in our day of the wide-reaching influence of imitation in life is one of the effects, as

Imitation.

well as one of the causes, of our deeper social consciousness. The description of the influence of imitation in mental development is associated with the names of Tarde in France, and Baldwin and Royce in America. For the full discussion of the subject in its universal bearing, the reader must be referred to the works of these authors.[1] Here it must suffice for us to do only three things, viz., to define the nature of imitation, to indicate its larger effects in mental development, and to suggest some serviceable educational uses of the principle.

The Nature of Imitation.

Imitation is the tendency of the individual to act upon the suggestions of others. In view of the social nature of the individual, the tendency is natural and instinctive. The imitation may be unconscious or conscious, even as the suggestion that is received may have been given consciously or unconsciously. When the pupil performs what the teacher asks, both the suggestion and the act are conscious. When the pupil's life is shaped by the teacher's character, the suggestion is doubtless unconscious, and the imitation may be conscious or unconscious. The suggestion is the tendency to act that accompanies the having of any idea, the suggestive quality being an invariable accompaniment of the occupation of consciousness by any idea whatsoever. "All consciousness is motor,"[2] says Professor James. And the body, delicate machine that it is, registers in some

[1] Tarde, "Les Lois de l'Imitation"; Baldwin, "Mental Development," two volumes; Royce, "Studies of Good and Evil," Essays VII, VIII.

[2] "Briefer Psychology," p. 370.

physical movement every idea that flits through consciousness. It is obvious that the suggestion upon which we act may be self-given, but only when it comes from others is the action imitation in the usual sense of the term. It is also evident that the suggestion received from another may be either what is said or what is done, may be precept or example.

The Effects of Imitation on Mental Development.

What does imitation do for the child in the way of mental development? Of course imitation is always assisted by all the other developing agencies mentioned above, and so no one of the effects now to be enumerated is wholly due to imitation alone. Among the more prominent mental effects in producing which imitation is a main factor may be included the power of speech, voluntary movements, self-consciousness, originality, and morality and religion. Imitation begins to work near the beginning of the ninth month,[1] is at the maximum of its influence during the early years, and continues its effect throughout life, though diminishing in the amount of its influence as individuality and maturity are reached. "When the imitative impulse does come, it comes in earnest. For many months after its rise it may be called, perhaps, the controlling impulse, apart from the ordinary life processes. As a phenomenon it is too familiar to need description. Its importance in the growth of the child's mind is largely in connection with the development of language and of voluntary movement generally."[2]

[1] Baldwin, "Mental Development, Methods and Processes," second edition, p. 131.

[2] *Ibid.*, p. 132.

Imitation and Self-consciousness.

The phenomenon of self-consciousness is largely due to the influence of imitation. Because the eyes and the deeds of its parents and others centre so much in the child, its consciousness in imitation of them is directed to itself. The consciousness of self would never be sharpened except in society. As Professor Royce expresses it: "The early intellectual life of the child is lost to us in obscurity, despite numerous recent observations. But we are sure that the infant, in the first months of life, has nothing that we should call self-consciousness. The first clear evidence that we get of the presence of a form of self-consciousness intelligible to us comes when the infant begins to be observantly imitative of the acts, and later of the words, of the people about it. In other words, the first ego of the child's intelligible consciousness appears to be, in its own mind, set over against a non-ego that, to the child, is made up of the perceived fascinating, and, to its feeling, more or less significant, deeds of the persons in its environment."[1] This recognition of one's self through the prior recognition of one's fellows will help us presently in considering imitation and morality.

Imitation and Originality.

After perceiving that self-consciousness is largely due to the processes of imitation, it will not be so difficult to see that even originality, contrary to one's natural first thought, becomes possible through imitation. To be original is to be something more than a mere imitator. It is to add something characteristic to one's copy; it is even to be selective of the copy that one will imitate. Once imitation has brought us

[1] "Studies of Good and Evil," p. 182.

to self-consciousness, then our choices will show and develop our originality. Here are conscious processes at work showing the uniqueness of our individuality. Through bringing us to consciousness of ourselves, imitation makes our originality possible.

But in two other ways still imitation indicates originality. There are selective responses to copies that are unconsciously made, and every response to a copy that is not parrot-like and insignificant for mental development is characteristic. The child does not imitate all the acts of every person that he observes. Many of them slip by him without making sufficient appeal to him to lead to imitation. He does not respond to them because they do not appeal to him. His rejection is not conscious; it is natural. But such natural rejections of certain copies declare his individuality and strengthen it. And, also, in the second place, it must be observed that those suggestions that do appeal to the child, soliciting imitative responses from him, are transmuted by his own individuality. He copies characteristically. Just as in the old copy-books for teaching penmanship, many pupils may be imitating the same copy, but no two copies of the copy are exactly alike, so every child declares his own originality in the way in which he imitates. "Very rarely do we find a literal repetition of what is offered. Even from the beginning there is a tendency to depart a little from the copy — to adapt it somewhat to the special circumstances and tastes of the individual; so that the replica always has a turn in it that the original did not have." [1]

[1] Stratton, "Experimental Psychology and Culture," p. 224.

Because imitation gives the child a self-consciousness which permits him to choose the kind of individual he will be, because he shows and strengthens his individuality by the unconscious selections and rejections which his nature makes, and because he is original even in the fashion of his imitation, we must recognize the polar relation in which imitation and originality stand to each other. "So that imitation is, after all, but one side of the mental process. The other side is *origination*, which is quite as real and demonstrable as imitation itself. Imitation is a mere schoolmaster to bring us to originality. The child, through imitating others, becomes aware of his own capacity for a wide variety of acts that he otherwise would have believed were beyond his powers; he finds that he is able to do what others do. In this way, his own strength and skill and versatility are not only cultivated, but are revealed to himself. Imitation, then, even when we slavishly copy the acts of those near us, is all the while teaching us our own capacity."[1]

Imitation and Morality and Religion.

The last of the effects of imitation on mental development important for our present consideration has to do with morality and religion. Morality is the recognition in conduct of the rights of other persons. Religion is the recognition in life of the rights of the Ideal Person. Since the imitation of other persons brings one to a consciousness of self, as indicated above, it is evident that self-consciousness and the moral consciousness are a twin-birth. In the words of Baldwin: "The *ego* and the *alter* are thus born

[1] Stratton, "Experimental Psychology and Culture," p. 222.

together. Both are crude and unreflective, largely organic, an aggregate of sensations, prime among which are efforts, pushes, strains, physical pleasures and pains. And the two get purified and clarified together by the twofold reaction between project and subject, and between subject and eject. My sense of myself grows by imitation of you, and my sense of yourself grows in terms of my sense of myself. Both *ego* and *alter* are thus essentially social; each is a *socius*, and each is an imitative creation." [1]

This fundamental sense of the unity of human nature in all individuals is the basis of morality. To the child's consciousness this is not a reflective, but an experienced, truth. What his fellows approve is to him the right, what they disapprove is the wrong. As Dr. Gordy puts it, "From this it follows that the beliefs of the very young as to what is true, fitting, right, noble, beautiful, desirable — apart from objects, which are desired because they satisfy the needs of the animal nature — *must* be the opinions of those by whom they are surrounded: there can be nothing else." [2]

It is to be observed here, that when the copies are bad, imitation works in the interest of immorality quite as readily as in the interest of morality when the copies are good. If there is no worthy model to offset the suggestion of the unworthy, the imitation is also inevitably of the unworthy. As the Apostle Paul long ago wrote to the Corinthians, evil companionships corrupt good morals. The bearing of

[1] Cited above, p. 338.

[2] "A Broader Elementary Education," p. 136.

this negative influence of imitation upon the educational process, as well as the positive, will be presently indicated, though indeed it is already evident.

It is no less true in the realm of religion than in morality that development is through personal imitation of the superior spiritual attainment of another. We come in the first instance to consider that other as a superior personality because our fellows do; then our imitation follows our respect. It takes a person to reveal personality, and an Ideal Person to reveal human personality completely to itself. To see one's own possibilities realized in another is to be attracted by that other, is to begin to imitate and become really like that other. ". . . whatever gain most of us make is by a kind of spiritual appropriation of what others have already attained. Through imitation the gains of one become a common possession, without loss to him who first made the gain; it is multiplied in those who avail themselves of it."[1] The Ideal Person, as conceived definitely by any mind, is the unity of all the perfect characteristics that one knows. This person may have been concreted once in human history, as in Jesus, in which case the process of imitation, and so religious growth, can go on far easier than when the ideal remains impersonal. The Apostle Paul again had this imitative process of spiritual development clearly in mind when he wrote, "But we all, with unveiled face reflecting as a mirror the glory of the Lord, are transformed into the same image from glory to glory, even as from the Lord the Spirit."

[1] Stratton, "Experimental Psychology and Culture," p. 219.

We have now seen the larger effects of imitation on mental development in certain cases of educational significance, particularly in leading to self-consciousness, originality, morality, and religion. Let it be said again now that imitation alone is not wholly responsible for these great achievements of the human self-active spirit, but it is largely contributory to them. It now remains to suggest certain uses that may be made of the principle of imitation in the educational praxis, and briefly, too, since our general inquiry is mainly theoretical.

The Educational Uses of Imitation.

It is the business of education from the psychological point of view to develop the minds of the young. In so far as imitation is one of the agencies of mental development, it is incumbent upon teachers and educational directors everywhere who desire to utilize every means that nature affords in their work to put the best models of every kind before growing children. These models may be material or the more potent ones of personality. Among the right material models into contact with which the school should bring the child may be mentioned a beautiful playground, an architecturally good as well as serviceable school building, well-lighted corridors, broad stairways, carefully ordered schoolrooms, neat and clean texts, a reasonably high requirement of the quality of work done, and an atmosphere of agreeable and engrossing occupation, to breathe which cultivates the sense both of the reality and the winsomeness of living.

Material Models.

In particular, the use of the model in the teaching of art and music has found and justified its place. It is

just finding its place, also, and will justify it, in the teaching of literature and composition.[1] As elsewhere imitation here will have its perfect fruit in an original, though disciplined, style.

Personal Models.

But since a person is more revealing and so more imitable to the forming mind than a material model, it is in the realm of personality and its influence that the principle of imitation has its highest educational service. Both the great common sense of mankind and the expert educational opinion have put central emphasis on the personality of those who teach the young. Emerson wrote to his daughter in college, "It matters little what your studies are, it all lies on who your teacher is." Similarly President Jordan is insisting upon "constructive individuality" in the teacher as the greatest thing in education. This emphasis is not misplaced. It justifies itself whether we consider the work of the teacher from his own point of view or from the point of view of the pupil. The teacher's own success is nine-tenths dependent on his personality, his success to include such elements as the regard of his pupils, his lasting influence upon them, the estimation set upon him by the community in which he works and by his employers, and the opportunities that come to him for wider service. "The teacher may possess most approved pedagogical devices, and be thoroughly master of the subject to be taught; but if at bottom he be bored by his work, nothing will quite prevent the child from being insensibly affected in the same way. And, on the

[1] See for such a text, Kavana and Beatty, "Composition and Rhetoric," New York, 1902.

other hand, it is due to the direct contagion of states of mind that the enthusiast, ill-equipped and clumsy though he may be, is often so successful in dealing with the young."[1] I cannot forbear to add to this fine statement the name of Pestalozzi in educational history as an illustration of its truth.

From the point of view of the pupils the personality of the teacher is even more important and significant than in his own case, as they are many and he is one. In this connection it is to be remembered that the most valuable elements in human life, morality and religion, are largely the products of childhood's imitation. The supplementary truth is also to be noted that these qualities of the human spirit cannot be taught; they must grow. The school cannot omit them, for they are too important; it cannot teach them, for they cannot be taught. Ethics can be taught, for it is the science of morality. Theology can be taught, for it is the science of religion. But morality and religion as dispositions of the heart and will can only be grown by the individual possessing them under the potent influence of suggestive patterns of righteousness and spirituality. The quandary of the school as to how to cultivate morality and religion without being able (in the nature of things, and not simply because of legal enactments against religious instruction) to teach them is solved through the provision of teachers with personalities worthy of imitation by the pupils. And the highest duty and privilege of the teacher is to be in whatsoever things are true, honest, just, pure,

[1] Stratton, "Experimental Psychology and Culture," p. 218.

lovely, and of good report what he is willing for his pupils to become.

The Nature of Personality.

Personality is one of those elusive words whose meaning can always be felt, but hardly ever defined. Personality, as the French say of style, is the man. More definitely, it is the spirit that unifies the attainments of a man; it is his attitude toward life, his point of view, his total character. All the great teachers of the race have had winning personalities. To take two illustrations, Socrates and Jesus. Plato, the greatest pupil of Socrates, puts his own best thoughts of most of his dialogues into the mouth of Socrates. It is the Socratic personality pervading the Platonic language. And the personality of Jesus, the Great Teacher, is still, and will never become less than, the dynamic centre of the Christian religion. That personality has put into the mouth of the ages the utterance of the demonstrative Peter, "Lord, to whom shall we go but unto thee, for thou hast the words of eternal life."

Other Responsible Agencies than the School.

It is a patent but not sufficiently remarked fact that the immorality and irreligion of a generation are not traceable to the school alone. This responsibility is to be shared with the central unit of society, the home; with that great sophist of human society, public opinion; with that great creature of society which ofttimes gives men law that is not justice, the state; and with that indispensable, indeed inevitable, institution of human life which ought to utter the voice of the ideal, the church. This fact is to be borne in mind in rightly estimating criticisms of educational results. Doubtless the American home, the very

heart of society out of which are the issues of life, is falling further short of its moral and religious opportunity in the cultivation of youth than any other social institution.

Transition to Interest.

Thus we have reviewed the nature of imitation, the effects on mental development to which it conspicuously contributes, and its educational uses. We now come to the consideration of that second wonderful word in our contemporary educational discussions, viz., interest, which, like imitation, is again one of many ways utilized by the self-active spirit of man in its own development. The transition from imitation to interest is easy. The child imitates that which interests him. What does not interest him, if left to himself, he leaves alone. Where interest is present, the educational machinery runs smoothly. Where it is absent, the dual problem arises of developing interest on the one hand or a will to follow the uninteresting on the other hand. This second phase of the problem will confront us presently when we come to the treatment of our third modern sacred word, viz., effort.

The Advocates of Interest.

Like imitation, the doctrine of interest has associated itself with great names. It first won its permanent place in the education of Émile as provided by Rousseau, but, like everything else announced by this untrammelled being, his doctrine of interest stood unrelated to other limiting truths. Rousseau's vision was penetrating but unorganized. A Herbart was necessary to contribute to Rousseau's insight the pedagogy of interest. The followers of Herbart are many, both in Germany and America, and the doc-

trine of interest has received many additions and restatements. In America the theory has been naturalized, as the kindergarten also is in process of being, and prominent exponents of it, to mention only two, are Professor Dewey and Professor de Garmo.

Interest in Education is Modern.

Like imitation also, interest in education is both an ideal and a practice of the present age. That education could be interesting and the schoolroom an attractive place was, until the eighteenth century, unthinkable. Dickens, in the nineteenth century, still had an audience that could appreciate Squeers. And Alexander Hamilton no doubt expressed the sentiment of his contemporaries when he wrote, "The great problem of education is how to induce the pupil to go through with a course of exertion, in its result good and even agreeable, but immediately and in itself irksome." It mellows one's vision and gives a tinge of rose-color to one's outlook to be able to record that to-day the happy life may, and of right ought to, begin in the schoolroom. The emancipating words of Rousseau in behalf of childhood are in process of fulfilment: "Émile has arrived at the end of the period of infancy [twelve years], has lived the life of a child, and has not bought his perfection at the cost of his happiness. On the contrary, they have lent each other mutual aid. While acquiring all the reason suited to his age, he has been as happy and as free as his constitution permitted him to be."[1]

In considering interest as a means of self-development, we have to inquire concerning its nature, its

[1] "Émile," tr. Payne, the International Education Series, p. 128.

importance, and the art of securing it. Interest is not a form of knowledge, though knowledge may be interesting; neither is it a kind of action, though action too may be interesting. But interest is primarily a feeling. A feeling is an immediate experience of consciousness, and the feeling of interest is an experience familiar enough to growing minds of whatever age. Every one knows that when he is interested something is proving attractive to him, is catching and holding the mind's attention, and that to this something it is no effort to attend. Because of the unity of consciousness, the feeling of interest is always attached to some object. This object may itself be something material, and usually is so in the cases of primitive man and childhood. Or it may be an idea, an act, or even another feeling. At this very moment perhaps we are interested in the feeling of interest. It thus appears that to be interested implies (1) a person who has the interest, (2) an object to which the interest may cling, and (3) an engaging quality of attractiveness about the object which captures the feeling. Putting these things together, and realizing that the definition of any feeling is inappreciable to him who has never experienced it, we may say that interest is a pleasurable activity of the self. The object of the interest is that upon which the activity of the self impinges.

The Nature of Interest.

Professor Dewey, having more prominently in mind the fact that the feeling of interest has an object than the absorbing quality of the feeling itself, thus defines it, "Feeling, so far as it is taken out of its isolation and put in relation to objects of knowledge or ideals

of action, is *interest*." [1] Professor de Garmo, who has so entertainingly shown that interest is bound up with some form of self-expression, writes thus, "For a genuine interest is nothing but the feeling that accompanies this identification of the self through action with some object or idea." [2] And Herbart, who began the work of systematizing the theory of interest in its relation to instruction, writes thus of its nature: "Interest means in general that species of mental activity which instruction must create, but which has no place in mere knowledge. For we conceive of the latter as a store which the man may entirely dispense with, and yet be no other than with it. He who, on the contrary, holds his knowledge firmly and *seeks to extend it*, is interested in it." [3]

False and True Conceptions of Interest.

These words from the masters indicate that the conception of interest current among those who deny its fundamental place as a mode of self-development is superficial and inadequate. Interest in education is not ease, it is effortless activity; it is not a classroom vaudeville, with the teacher as chief performer, it is engrossing occupation; it is not an amusing entertainment of the pupils, it is a joyous attainment by the pupils; it is not play, it is attractive and compelling work; it is not pursuing the line of least resistance, it is discovering the line of greatest attraction. And the true opposite of interest is not hard work, but drudgery, not solid acquisition, but wearying

[1] Psychology, p. 276.

[2] "Interest and Education," p. 27.

[3] Quoted in Felkin, "An Introduction to Herbart's Science and Practice of Education," p. 94.

monotony. Interest is the oil which lubricates the wheels of the class-room machinery. These considerations bring us in the next place to attempt to estimate the importance of interest in education.

The Importance of Interest.

"Interest is the greatest word in Education." These words of President Schurman stand on the title-page as the motto of Professor de Garmo's volume on Interest and Education. Though we might prefer to save this highest estimate for the third of the wonderful words in modern education, namely, effort, this pronouncement nevertheless forbids us to treat slightingly so real a matter.

Interest is one of the great words in education, because it removes drudgery from the school, puts the motive power of the feelings at the disposition of the teacher, and is the immediate aim of all instruction.

Interest and Drudgery.

Interest removes drudgery from the school. As soon as an object of endeavor becomes interesting in itself, like the learning of a lesson, like the recitation of a class, or the solving of a problem, this object becomes an end of action in itself. It is no longer done as a disagreeable means to an agreeable ultimate end. It is done for its own sake. The way has become attractive and worth while as well as the goal. The daily toil, as well as its final reward, receives the judgment of worth. This is the effect of interest in study. And this effect is also true, for, just as interest indicates, values do lie in the doing as well as in the deed. But the very essence of drudgery is the doing of what one does not like for the sake of something that one does like. "If the interest in the end alone

remains and no interest attaches to the means, then we have drudgery." [1] No wonder that so long as the school was thought of as a preparation for later real living, its tasks were also drudgery; but now that the school has become a participation in present real living, its labors are also become meat and drink to young souls. The day of the emancipation of the individual from slavish work done in subjection to the will of another is at last also dawning in the school. Rousseau sounded the death-knell of feudalism in education, and Herbart made the interment. No doubt in those modern schools where the atmosphere of interest has supplanted that of *ennui* the pupils do those things which they ought to do quite as well as, if not better than, in any preceding schools of civilization. And they certainly leave undone the more, those things that ought not to be done. And these results are wrought, not through the old fear and authority, but through the new love and liberty. Pupils are nowadays doing what they ought to, more because they want to and less because they have to than in any period in the history of culture.

The Motor Power of the Feelings.

Interest puts the motive power of the feelings at the disposition of the teacher. It is an open question whether the feelings are not the greatest motive powers in life. No idea which the feelings fail to welcome can abide in the home of the mind. And no unchanging and uninteresting thing can remain the object of voluntary attention longer than a few seconds at the time. Without the enlisting of interest, ideas quickly fade away into nothingness and attention is

[1] De Garmo, "Interest and Education," p. 32.

intermittent. "Present interest is the grand motive power, the only one which leads with certainty to great results," announces Rousseau.[1] The educator who would instruct the intellect and fashion the will must also win the feelings. Of course interest is but one of the many feelings of possible service to the teacher.

The Immediate Aim of Instruction.

And the securing of interest in the subject is the immediate aim of the work of instruction. The remote aim varies with circumstances; it may be the acquisition of knowledge for its own sake or for utility; it may be the formation of character; it may be the cultivation of the æsthetic sense; it may be social efficiency, or the comprehensive aim of complete living. But in any case it is the immediate business of instruction, in justice to its opportunity, to develop an interest in the subject taught as the most efficient means to its remote end. The teacher who has solved the present problem of interesting his class in the subject-matter has solved the larger problem of instruction. The possession of truth is preconditioned by its warm pursuit.

One of the Herbartians, Dr. R. Staude, has stated the relation of interest to instruction in the following way, "Interest is the light with which Herbart has once for all illumined with the brightness of day the dark and mysterious ways of the art of teaching; it is the magic word which alone gives instruction the power to call out the minds of the young and make them serve the master's aims; it is the long lever of education which, moved easily and gladly by the

[1] *Op. cit.*, p. 82.

teacher, can alone bring the will of the young into the desired direction and activity."[1]

The discussion of the importance of interest as the immediate aim of instruction shall close with the following words from American authors: "The problem of teaching an intelligent savage some technical scientific matter would not be chiefly a problem of how to give him sensations regarding it, nor how to give him mental capacity enough to understand it, but how to arouse his *interest* in such a way that he would set his mind to work upon it. Interest is, therefore, as much a necessary source of knowledge as is sensation. Sensations might have all the objective qualities that they now possess, and yet if they failed to interest, the mind would pass them over and they would never enter into the structure of our knowledge."[2]

The Art of securing Interest.

This significance of interest in the work of instruction brings us to our next question, viz., the art of securing it. If interest is the immediate aim of instruction, how can it be gotten? This is one of those practical questions that from time to time have wedged themselves into our general theoretical inquiry, and whose answers involve for their execution not so much insight on the part of teachers as a certain art and skill.

In brief, it may be suggested that interest begets interest, that interest accompanies natural mental growth, that interest is felt in any unified variety, and that interest appears in the novel that is similar to the familiar.

[1] Quoted by Felkin, *op. cit.*, p. 102.

[2] McLellan and Dewey, "Applied Psychology," p. 18.

Interest begets interest. There is nothing so contagious as a feeling. Given a teacher himself brimming with interest in the subject taught for its own sake and for the pupil's sake, and that is a rare and frigid class indeed that will not thaw under his genial influence. An Interested Teacher.

Interest accompanies natural mental growth. A pupil whose intellectual capacity is, on the one hand, insulted by the elementariness, or, on the other, overwhelmed by the advanced character, of the subject taught or of the method of its presentation, cannot be expected to follow the work with interest. There must be an adjustment of matter and method to the mind of the pupil. Interests, like instincts, ripen and decay. Let the educator take the tide of the pupil's interest when it is at the flood. The ordered curriculum and the growing mind must be well met at every point. An Ordered Curriculum.

Interest is felt in any unified variety. This suggestion applies to the character of the text-books selected, and to the method of the class room. Variety alone is distracting; unity alone is tiresome. The text-book, and the method of teaching, must go on an errand. There must be movement and there must be purpose. The bane of texts is lack of unity; of method is lack of variety. The secret of interesting, as of æsthetically pleasing, the mind is to present it with a variety in unity. Unity in Variety.

And also, interest is felt in the novel that is similar to the familiar. The novel that is unintelligible is simply curious; the familiar has become commonplace; but the novel that is intelligible through like- The New and the Old.

ness to the familiar, solicits investigation and interest. Knowledge is the basis of interest, — one is interested in that concerning which he knows something, and wants to know more. The pupils know something. Recognize this, and present the new material so that it makes connection with what is already in the mind of the class. Their expression will interest where the teacher's impression will fail. They are already interested in some things. Discover these, and present the new subject as an extension of old interests. The teacher is like the householder who brings forth things both new and old; the old is what his pupils know, and are already interested in; the new is what he wants them to learn. This is, of course, the Herbartian doctrine of "apperception." That teacher is interesting who can make new things seem old, and old things new. The secret of it is making the pupil the centre of interpretation. Teach out from him in all directions. He will be interested in the world, or any part of the fulness thereof, if he can only see it as his. To make the subject reflect the self of the student, that is the very essence of securing interest.

A quotation from Professor James on any subject which his brilliant pen has touched is always in order. Considering how interest is acquired, he writes: "From all these facts there emerges a very simple abstract programme for the teacher to follow in keeping the attention of the child: Begin with the line of his native interests, and offer him objects that have some immediate connection with these. . . . Next, step by step, connect with these first objects and experiences the later objects and ideas which you wish

to instil. Associate the new with the old in some natural and telling way, so that the interest, being shed along from point to point, finally suffuses the entire system of objects of thought." [1]

Herbart's Doctrine of the Relation of Interest to Will.

An object of thought that is, or has become, interesting in itself receives the involuntary attention of the pupil. He attends because he likes to attend, easily and without effort. There are those who, captivated by the doctrine of interest and feeling the spell of their master, Herbart, eloquently declare, that interest is the only avenue to attention, that the presence of compelling ideas is the only condition upon which the will can act, that the will is subject to "a circle of thought." In the words of one of these enthusiastic champions of the bondage of will to interest, "since study depends on the will, *how* is the will to be reached? By the power of apperceptive interest, he [Herbart] replies. Through apperceptive interest, Herbart, as we have seen, appeals directly to the will, and draws it without constraint, by the gentle attraction of assimilated knowledge, into the service of instruction. It is this, his interpretation of the principle [of interest], which may without exaggeration be called a great discovery, one which, as it becomes more widely known and understood, will tend to mould all true education in the future." [2]

The Truth is in the Whole.

After the preceding discussion of interest no one perhaps will say that I am unmindful of its place in education. Only I would say that its place is along with other important things, like imitation and

[1] "Talks to Teachers," pp. 95–96.

[2] Felkin, *op. cit.*, p. 101.

effort, and not in their stead. Neither am I, on the other hand, though preparing a way for the consideration of effort in education, among that small strenuous number who fear that the advent of interest in education is synonymous with a reign of weakness. Rather is my position, in idea at least, that each one of these three great modern educational words contains and conveys a needed message in our day, that the truth which we seek is in the unity of the conflicting opinions. Come we then to the consideration of the third of the ways in which the self-active spirit of man realizes itself, to that most significant of all personal words, viz., effort.

Transition to Effort.

Let the teacher do what he will to interest the class in the subject, at times his powers will fail, his words return unto him void, and his class stare at him vacantly without "speculation in their eyes." In such barren and waste places in the work of the class room, nothing but "a slow dead heave of the will" from teacher and pupils alike can carry us safely over into the inviting fields beyond. Howsoever winning the work of recitation, at times in his private preparation the tide of the pupil's interest will be on the ebb. In that hour of trial only a vigorous will capable of pursuing the uninteresting, though important, task will prevent the pupil from being beached on the shore of inactivity and idleness. At that moment when interest fails but attention continues we have effort. And at any moment when the right thing to do is not the most interesting there is the opportunity for effort; there, also, is a moral situation, full often of tragic import.

The Free-will Question postponed.

It is pertinent to inquire at this point whether the effort put forth by the individual at a given time is a variable in amount, subject only to the mind's initiative in disposing of the physical energy at hand, or a fixed quantity and determined absolutely by the sum total of the conditions. To maintain the former is to be a libertarian; to defend the latter is to be a determinist. Though the inquiry is pertinent here, its full discussion is not possible on psychological, but only on metaphysical, grounds. As such, we must reserve this question for our final chapter.

But the phenomenon of effort, or the voluntary attention to the uninteresting, is the same psychologically, whatever be the metaphysical interpretation of its significance. There can be little question as to what introspection reports concerning the mental state of doing an unattractive, though valuable, task. Concerning the phenomenon of effort, then, as the last of the three ways utilized by the self-active spirit of man in its own realization, let us inquire as to its nature, its importance, and its place in education.

The Nature of Effort.

Effort is the strain consciousness puts upon itself in performing unattractive work. It is voluntary attention to the uninteresting. It is the will to do one's duty when one doesn't want to. It is listening to the still small voice of conscience instead of the whirlwinds of passion. It is overcoming inertia, acting in the line of greatest resistance. In the language of Professor James, who has more eloquently propounded the ultimate worth of effort than any other psychologist: "Now our spontaneous way of conceiving the effort, under all these circumstances, is as an

active force adding its strength to that of the motives which ultimately prevail. . . . The ideal impulse appears, in comparison with this [propensity], a still small voice which must be artificially reinforced to prevail. Effort is what reinforces it, making things seem as if, while the force of propensity were essentially a fixed quantity, the ideal force might be of various amount. . . . It [the effort] appears adventitious and indeterminate in advance. We can make more or less as we please, and *if* we make enough we can convert the greatest mental resistance into the least."[1] Professor James thus interprets the phenomenon of effort from the libertarian point of view as defined above.

Effort does not simply mean that through it more of the same thing will be done; it means also that through it a different thing is done. When alternatives of action are present and of unequal strength, it takes effort to follow the weaker. "True effort consists *in reinforcing by additional ideas, desires, and motives, the side felt to be the weaker.* It may be true that action follows the strongest desire, but it is also true that we have the power to call up considerations and feelings that strengthen and that weaken the force of a desire."[2]

The Importance of Effort.

The importance of effort grows out of its nature. Unless introspection is deceived in reporting the nature of effort, the pupil has the ability to reach the port of knowledge, even though the tide of interest fails; and he has the ability to steer for the

[1] "Briefer Psychology," pp. 443–444.

[2] McLellan and Dewey, "Applied Psychology," p. 139.

haven of virtue, even though the winds and waves of impulse and appetite are boisterous and opposing. Out of the depths of the soul's struggles the jewels of knowledge and virtue are mined. Happy is that child of fortune whose duties and pleasures always coincide, but blessed is that son of toil who stops his ears from hearing the sirens' song as he sails by the enchanted isle of pleasure on the homeward way. The originality and bare significance of the individual soul appears in what it can do through effort as in nothing else. Sir Fowell Buxton is quoted as saying: "The longer I live, the more I am certain that the great difference between men — between the feeble and the powerful, the great and the insignificant — is *energy, invincible determination*, a purpose once fixed, and then, *death or victory!* That quality will do anything that can be done in this world; and no talents, no circumstances, no opportunities, will make a two-legged creature a man without it." But to Carlyle must we go for the true gospel of effort. "Sweat of the brow, and up from that to sweat of the brain; sweat of the heart, up to that 'agony of bloody sweat,' which all men have called divine! Oh, brother . . . this is the noblest thing yet discovered under God's sky."

How to Cultivate Effort.

What can the schoolroom do to cultivate so important a mental power? As heretofore, our practical paragraphs must be brief.

Awaken Ultimate Interests.

Teachers strive to awaken ultimate and remote interests whose satisfaction demands long and laborious pursuit, as well as immediate and present interests whose satisfaction is easy. To discover to a

student his life-needs and interests, that is a prize worth the best endeavor of a teacher. Really to succeed in doing so is enough to induce the student to undertake whatsoever disagreeable means are necessary to reach that esteemed end. Of course this suggestion presupposes a certain maturity on the part of the student, at least that the pre-adolescent age of many and superficial interests is passed. It will be observed how the principle of interest, though one degree removed, still guides us in the cultivation of effort. To appeal to ultimate, not present, interests is to cultivate effort. This is very different from being interesting as a teacher.

Form the Habit of doing the Disagreeable.

Pupils should be taught that the strongest strength is developed by doing what they do not like to do. In fact, not to want to do a given thing, not in itself bad, is itself a good reason for sometimes doing it. As Professor James writes in his famous chapter on Habit, which President Faunce says has been preached from a thousand pulpits: "*Keep the faculty of effort alive in you by a little gratuitous exercise every day.* That is, be systematically ascetic or heroic in little unnecessary points, do every day or two something for no other reason than that you would rather not do it, so that when the hour of dire need draws nigh, it may find you not unnerved and untrained to stand the test. Asceticism of this sort is like the insurance which a man pays on his house and goods. The tax does him no good at the time, and possibly may never bring him a return. But if the fire *does* come, his having paid it will be his salvation from ruin. So with the man who has daily inured him-

self to habits of concentrated attention, energetic volition, and self-denial in unnecessary things. He will stand like a tower when everything rocks around him, and when his softer fellow-mortals are winnowed like chaff in the blast."[1]

The Exercise of Concentrated Attention.

Teachers and pupils must understand the nature of concentrated attention through effort. Voluntary attention given to an uninteresting subject can be sustained only a little while at a time, at most a few minutes; if the subject does not change, at most a few seconds. Under such circumstances work can be done only by continually bringing back the attention to the subject in hand. Concentrated attention to an unattractive task is not attention that does not wander, but attention that does not get lost. Concentrated attention through effort is like a serial story, not continuous but continued. "And the faculty of voluntarily bringing back a wandering attention over and over again is the very root of judgment, character, and will. No one is *compos sui* if he have it not. An education which should improve this faculty would be *the* education *par excellence*."

The Mutuality of Effort and Interest.

As already intimated, so far from opposing each other, effort and interest really offer each other mutual support in education. Immediate interest must hold sway with all young pupils before the powers of voluntary attention are developed. Immediate interest must still hold sway, even with older pupils, where it can be commanded. It does not make them idle; it makes them work. Nor is it

[1] "Principles of Psychology," Vol. I, pp. 126–127.

necessary for teachers to be intentionally less interesting than they can for the sake of providing unattractive difficulties for pupils to thrive upon. Be as interesting as our genius or our effort permits, the school will still be a training-ground of voluntary attention to unattractive tasks. The difficulties whose mastery develops strength are not the unnatural ones provided on purpose by the teacher, but the natural ones of the developing subject and curriculum, as in climbing a mountain the natural ascent is difficulty enough without unnecessary stones being placed in the path before us. However, when interest has done its best, effort has still to do its part. The extremity of interest is the opportunity of effort. They stand to each other as love to law. Love is the fulfilling of the law, and where love is, there is liberty; but if love fails through human imperfection, the law is still there behind us, urging us on to our duty. So when interest is present, it is enough; but when it fails, as it sometimes will in the best schoolroom or in the best life, the capacity of effort is still there to carry the burden. The breezes of interest filling our sails may die away into nothingness, and then only the strong oar of effort can bring in the boat.

Neither must we omit to observe that the beginnings, as well as the middle stages, of growth of a subject, have their peculiar difficulties, when interest is hard to develop. The new subject will not quickly make its connections with the old subjects or with life. Here a little effort in the mastery of elementary and technical details will quickly lay a foundation for real knowledge of and interest in the subject.

The effort needed to conquer "the agony of starting" is like the little sturdy tug-boat that tows the big vessel out of the harbor into the open sea, where it can go of its own momentum. Effort thus leads to interest.

A Larger Conception of Effort.

Almost have we limited the conception of effort to mastering difficulties, to voluntarily attending to the uninteresting. This is true in a narrow sense of the term, but would be incorrect as our final word. Effort may be a large as well as a difficult activity of the self. The little tug is noisy and puffing; we say it is making an effort. The large vessel under full headway glides easily; it would be incorrect to say no effort is being made. The effort is concealed in the largeness and the ease of the motion, but great energy is being expended nevertheless. Just so a great and compelling interest may solicit from us all our active power, though quietly and easily. Thus interest calls out effort, in a large sense of the term. Professor de Garmo has this view of the matter in mind when he writes: "Effort is really the process of trying to realize an end through work. Desire is the tendency of the energies to push on to accomplish the object of effort. Effort, therefore, is really an evidence of desire. These two things, effort and desire, are consequently only two aspects of one thing, two phases of self-repression, when the end to be attained and the means for reaching it are separate."[1] Our words about effort have intended to add to this conception, not to take from it. Effort is the servant of interest, as the Herbartians say, as the law is the servant of love. But effort is also the master of interest when

[1] "Interest and Education," p. 37.

interest is unable either to start a new process or to keep it going, as he who is not under love is still under law.

And our last word about effort and interest shall be this : it is only when they help each other that our work approaches perfection. To be interested without effort is to be entertained, to float with the current ; to exert effort without interest is to be wearied, to row against the current ; but to be interested with effort is to enjoy what is being accomplished, is to be steering for my destination while the current favors my progress. Interest with effort introduces the element of play into man's work, when his efficiency is at a maximum. Our work is never done best until it is done easily.

And herewith is ended our discussion of those three chosen ways, imitation, interest, and effort, whereby man's complete self-realization is attained. The underlying conception of self-activity as well as its special manifestation in mental effort are contributions of the old rational psychology to our discussion ; the conceptions of imitation and interest are from the modern genetic psychology. The phenomena of education demand for their interpretation all the varying psychological insights.

Having seen the nature of that activity of the self in its typical manifestations whereby self-expression is secured, we have next to raise the inquiry concerning the nature of that self-development which is the consequence of self-activity. This is our second general question of the psychological aspect of education. To answer it, we must again call upon the results of both the genetic and the rational psychology, and to this answer we now turn.

CHAPTER VII

THE PSYCHOLOGICAL ASPECT OF EDUCATION
(concluded)

The Notion of Self-development.

WHAT is the nature of that self-development which self-activity secures? There are three things to be remarked concerning the nature of self-development, viz., it presupposes time as its condition, it marks the transition from the potential to the actual, and it proceeds through successive stages of growth. Each of these implications of self-development must occupy us briefly. And first, the presupposition of time.

The Presupposition of Time.

In any development the element of time is necessary as its presupposition. Through time things grow from less to more. The abbreviation of time is the abbreviation of development. The stoppage of the educational processes before maturity is reached means arrested development. It is a conspicuous fact that the time of mental immaturity for the human being is longer than that for any other creature. The physiological basis for this fact we have previously seen in discussing the significance of infancy. This fact it is, affording adequate time, that makes the greater education of the human mind possible. The period of youth, as well as the period of childhood, is greatly protracted in the human species. We may save time, if we will, by cutting

short the years of youth in the school, but we are thereby losing education. Time is the condition of development, and generous nature indicates to educators, by the periods of childhood and adolescence preceding maturity, the amount of time necessary for the development of a man.

The Potential becomes the Actual.

Secondly, in any development the potential becomes actual. That which a developing thing is to become, it already is latently. Organisms, like plants and animals, grow by development from the inside out. Other things, like stones and mountains, change by accretion and attrition. As Aristotle, the fulfiller of the Platonic system, showed, the idea toward which the organism grows is already in the organism itself potentially. The ideal of a thing is the perfection of that thing, not the making of it into something else. A thing can become by development only what it is already in germ. The thistles do not grow grapes, nor the thorns figs. So in mental development, education simply brings out of the mind what was already in it. To aim at anything else is to get an artificial accretion or a parasitic growth. The young mind has within it already in latent form all the powers it can ever hope to reach by development. The school cannot send real men into society unless the home sends potential men into the school. Education can neither create nor endow, it can only develop. But develop it should, and not substitute any lower aim, like information, unless this word be used in its etymological meaning of shaping from within according to nature. The bane of the school has been the insistence upon uniformity of method

and uniformity of product. This is not development but moulding. Men are not made after the fashion of the factory, but of the garden. The pupil must not be conformed to the wooden educational image, but transformed into the likeness of his true self. Education was the ancient Roman's method of bringing *up* his child; it is our method of bringing *out* the child. The lofty and legitimate psychological aim of education is to make of each pupil all it is possible for him to be. Development is the greatest word in the field of education. The idea of development is as basic in the school as justice is in the state and righteousness in the church.

Thirdly, after the element of time and the realization of the potential, any self-development implies successive stages of growth. "First the blade, then the ear, then the full corn in the ear." So in the development of the mental and moral human nature, first the child, then the youth, then the full powers of the man. These divisions of the developing life fall in with our common thought; they also have scientific bases. A few words concerning each of them.

The Stages of Mental Growth.

Childhood is better described as the first stage of mental development than as a definite period of years. A youth, a man, a race, may still be in mental development like a child. To limit the term childhood to a precise period of years is dangerous, not simply because a given individual may remain a child beyond the limit assigned, but also because all individuals pass imperceptibly out of the stage of childhood. The essential thing about childhood is

The Stage of Childhood.

not its years but its characteristic point of view. However, these limitations need not deter us from striking averages and from saying for purposes of convenience that the usual period of childhood as a certain stage in mental growth covers about the first ten years of life. Educationally considered, childhood belongs to the kindergarten and to the primary grades of the grammar school. It includes the initial three years of infancy in the home. There is, of course, no special sanctity in the term *childhood* as covering this period, since usage is by no means fixed in the case.

What, then, are the characteristics of childhood as thus designated?

The Intellect of the Child.

Intellectually considered, childhood represents the reign of the senses. Even while the baby is still weak and helpless, the nerves of the special senses and their corresponding brain centres are considerably developed. Within a few days of birth the lower senses of touch, taste, and smell are operative, to be followed speedily by those of hearing, sight, and the muscles. The first problem before the child's mind is the coördination of sensations, to recognize the seen thing as also the felt thing, and to reach successfully for the thing seen. This unification of sensations gives concrete objects of experience, things, the knowledge of which through a single sensation or more is perception. When sensations symbolize things, the child has developed the perceiving ability, and is on the highroad to success in the conquest of his world. The child is the true Berkeleyan, *esse est percipi*. The concrete thing is the

object of his experience, and observation is his sole mode of mental acquisition. At about the age of three, through the muscular sensations, the organic feelings, and the double sensation of touch when in contact with a portion of its own body, the distinction arises in a vague way between himself and other things. This is the germ of later inner perception, as the knowledge of states of consciousness and self-consciousness.

To sensation and perception, as powers of the mind in childhood, must be added the beginnings of memory and imagination. To remember is not yet the easy delight it will be presently, however, and his imagination is of that playful kind which does not distinguish fact from fancy. The distinction of truth and falsehood arises later than the imagination, the bearing of which upon the exaggerated narrations to which children are prone is evident, as well as upon the question in casuistry concerning telling fairy stories to children. In the morning of life the rosy imagination illumines the world of the child before the white light of truth appears.

Recognizing sense-perception as the characteristic intellectual activity of the child, resulting as it does in the knowledge of the concrete sensible things of experience, we may describe the point of view of childhood, intellectually considered, as the *individualizing* epoch of mental growth.

But the feelings and the will, simple also though they are, must not be omitted from our account of childhood, though they by no means are subject to the same definite analysis as the intellectual functions.

The facts themselves are vaguer, more difficult of study, and also more neglected by child psychologists.

The Feelings of the Child.

The feelings of a child are mainly those of pleasure and displeasure. Between these two extremes he swings easily, the slightest thing being sufficient to elate or depress him. Out of these two primitive feelings many psychologists develop the whole array of man's emotional life, ending in æsthetics. But the child also undoubtedly has those other Wundtian simple forms of feeling, viz., excitement and rest, tension and equilibrium. The organic, vital feeling of comfort and discomfort is continually present, the substratum of the sense of self. The pleasures and displeasures of the child are mainly, as would be expected, of sensational origin. Every sensation, in fact, comes with its garment of feeling about it,—pleasurable, when within normal limits, displeasurable when either minimal or excessive in intensity. The sensations of movement, either random or, later, playful, are full of the most genuine pleasures to the child's life. Only the displeasure of great weariness can inhibit the pleasure of the child's playing. Pain is a unique sensation in itself, not to be confused with the feeling of displeasure. Pain, or any other sensation that becomes disagreeable through monotonous repetition or high and low intensities, excites the feeling of displeasure.

The complex, coarser feelings which a child of ten may have make a long list, including such as joy and grief, love and hate, anger and fear, and pride and shame. These are called coarser feelings because their bodily accompaniments are strong. In origin they are rather instinctive than due to experience or

teaching. The æsthetic feeling is present as love of color. The feeling of wonder is early and very important as a spur to the child's inquiring habit of mind, often so unjustifiably vexatious to older persons. Very strong and quickly formed are the child's likes and dislikes, and in general they are determined by what ministers to or hinders his personal comfort. Sympathy is present as a feeling, it is evident, in the child, but it develops later than self-regard, and in general is in subjection thereto. Perhaps the feeling life of the child may be described as *self-centred*, which in itself forms one of the hard problems of social and moral education.

The Will of the Child.

The will of a child is unstable. He is largely subject to impulse. The inhibitive powers are weak, the expressive powers strong. Ideas act themselves out quickly; they do not tarry in consciousness long enough for contradictory suggestions to arise, which would lead to hesitation and deliberation. For the child, to think is to act. He is the best illustration of Bain's principle of "ideo-motor" action. His will is his ready and unthinking response to his uppermost ideas. The proverbial thoughtlessness of the child is the explanation of his explosive will. He follows his ideas instead of directing them.

This impulsiveness of the child, which is the essential characteristic of his will, is preceded in early life by random, reflex, and instinctive acts. The random movements of the limbs of an infant are signs of exuberant vitality, and conduce to muscular growth. The reflexes of the child are simple responses of the nervous system to mechanical stimuli, like withdrawing

the foot on its being tickled. The instinctive acts like creeping, standing, and walking are complex reflexes; they are inherited nervous mechanisms that go off like alarm clocks at the right moment. The acts of children are mainly instinctive and imitative until the age of three. Then they begin to know what action is coming before it takes place, but with practically no ability to change or thwart it. This mode of action is impulsive, and properly characterizes the period of childhood. The great service of the earlier random, reflex, and instinctive acts is that they make possible, through the development of impulse, the later clearly chosen acts, which are the highest products of will. Acts often repeated involuntarily leave in consciousness their corresponding sensations to represent them, the so-called "kinæsthetic ideas," through the use of which consciousness later performs its chosen acts.

The natural responsiveness and suggestibility of children indicate the extra importance of their having only right ideas from the beginning. Their moral education had better begin in this positive fashion than in the negative way of filling their minds with a multitude of things not to be done. To have these forbidden things in mind is already to be doing them incipiently. Children have no wills to be broken; they have only ideas to be followed. Instead of blaming them for being wilful, their consciousness should be charged with the right idea. The moral education of the child consists in keeping his heart diligently from all evil and filling it abundantly with good treasure. This problem changes faces considerably when the

inhibiting powers of youth are developed, as we shall see presently.

The Stage of Youth.

Remembering all that was said above about arbitrary divisions in mental development, the gradual transitions from stage to stage, and the unequal rate of growth of different pupils, we may venture to assign to youth the period of years from about ten to about eighteen, covering the last years of the grammar school and the whole of the secondary school life. It includes the growth into and through the wonderful adolescent age when the great deep of human life begins to show its passion and its power.

If, intellectually considered, childhood is the *individualizing* epoch, youth must be called the *relating* epoch. The things of the child have become the classes, the groups, the conceptions, — in short, the relations, of the youth. The sense-perception of the child has become the understanding of the youth. Not that the powers of childhood are destroyed; they are only fulfilled. Childhood with all its promise and prophecy does not pass away; it passes onward. Each later stage in mental development is but the blossoming of powers that were budding earlier. In a genuine mental growth nothing is lost; the earlier stages are destroyed as such only to be preserved at a higher level. The youth still retains the things perceived as a child, but he understands them in their relations to other things; his feelings still centre in self, but they reach out in fond attachments and friendship for others; his will, too, is still responsive to ideas, only he takes more care as to which idea shall be uppermost. In general the youth is begin-

ning to appreciate the bearings of things; he is also getting his own bearings in the great new world, of which he now feels himself consciously a part. It is the formative period of life *par excellence*.

The Intellect of Youth.

To delay briefly on the intellectual, emotional, and volitional aspects of youth: Intellectually, it is the time when memory, imagination, conception, and the understanding represent the mind's best powers. Memory retains and recalls the earlier impressions of sense. It is the great time for providing the mind with those essential facts of nature and history without which later culture is lacking in positive content. The imagination busily recombines the images of the past in new forms, and paints for itself a future all its own. It is the great time for the racial epics and storied experience. Conception grasps individuals in groups according to their similar relations, and introduces economy into mental life. It is the great time for the elementary classifications of natural phenomena, and for providing the mind with those labels of life that give exactness and speed to decision. And the understanding, the power of detecting resemblances and differences between individuals, brings things into mutual relations with each other, each after its own kind. It is the great time for appreciating those essential connections between phenomena without which nature is chaotic and human life fragmentary. The intellect of the youth, seeking relations, finds the world springing to meet it, bearing those relations in its very constitution.

The Feelings of Youth.

The case is not different with the feelings. It is the period in which the self finds itself in other selves.

Friendships are formed as lasting as life. The halo of romance illuminates the face of existence. Affections, attachments, devotions, loyalties, have full sway. Particularly is it the time of aspiration; the young life is seeking its source; it has found its wings and would mount to the skies. The sensitiveness to the æsthetic is quick and becoming defined. Regard for personal appearance, susceptibility to decorum, consideration for the feelings of others, desire for social approval, all indicate that the emotions are giving life some of its permanent hues. Not infrequently a seriousness comes over youth in view of the great real life beyond, like the clouds of spring. In brief, youth disengages all the strong feelings that later life shall temper and organize. Their centre has shifted from the *self* of the child to the *other selves* of the youth. Once again in natural manhood shall we see a shifting of the centre of the feelings.

The Will of Youth.

And now a word about the will of youth. The general transitional character of youth is also manifest here. Conduct is inconstant and variable. Reliability is not yet established. Many interests ripen and decay. The youth is by anticipation a member of the various occupations in life in turn. Attention is solicited mainly by the things that interest rather than by the things that are important. The externals of study, like rewards, prizes, marks, and penalties, still have their attractiveness for the will. Present as against remote ends have predominating influence. The personality of the teacher is at the maximum of its influence. With all these survivals of childhood present, the youth is nevertheless pressing forward

into the region of self-mastery. The stirrings of new physical life are like frisky unharnessed colts trying the powers of their owner. All the agencies are under way that will presently make the youth the man, but they are not coördinated and systematized. A great underlying, controlling purpose has not yet organized the manifold impulses of youth into one grand whole. His will and its manifestations are like the runner who warms himself up with many movements for the race that is to come. The steadiness of strenuous activity is not yet. In summary we may say that the will of youth is in process of making sure of itself.

The Stage of Manhood.

The transition from youth to manhood is "where the brook and river meet." The brook of delightful promise empties itself into the river of service. Out of the ear grows the full corn. The blossoming of youth becomes the fruitage of maturity. This third period covers the work done by the colleges and the universities.

The Intellect of Man.

The powers of conception are magnified in judgment and reasoning. Classifications yield up their unity. The sciences lead to philosophy. Things are seen, not in themselves, nor even in their relations simply, but in their totality. If, speaking intellectually, childhood is the *individualizing*, and youth the *relating*, then manhood must be the *unifying*, epoch. The senses and the understanding find their fulfilment in the reason. The static and the dynamic categories yield to the organic. The independence of the individual as revealed through sense-perception made way for the dependence of the individual as revealed

by the understanding, only that both of these stages might complete themselves in the independence of the whole as revealed by the reason. In the admirable language of Dr. Harris: "The lowest thinking activity inventories things but neglects relations; the middle stage of thinking inventories relations, forces, and processes, and sees things in their essences, but neglects self-relation or totality; the highest stage of thinking knows that all independent being has the form of life or mind, and that the absolute is a person; it studies all things to discern traces of the creative energy which is the form of the totality." [1]

The Feelings of Man.

The feelings of the man have touched the high point of their development in the sense of the beautiful and the sublime. Once the soul of man has felt the perfect, which is the enjoyment of beauty, and has felt its own exaltation through its kinship with the infinite forces even in the moment of its humiliation, which is the sense of the sublime, man's emotional life has incorporated that unity of reality which his reason has intuited.

The Will of Man.

And the will of man is that disciplined activity which pursues purposes steadily, and realizes great ends. Self-control and self-direction are its characteristic qualities. Attention is voluntarily given to the uninteresting present task for the sake of the important future accomplishment. The inclinations of heredity and the influences of environment are but helping or hindering forces in the will's masterful achievement of life's plan.

We may omit here further details in description of

[1] Harris, "Psychologic Foundations of Education," pp. 36–37.

manhood as the final stage of mental growth, in view of that other question awaiting us presently concerning the characteristics of the educated mind.

Thus we have reviewed those stages of mental growth which are implied in the notion of self-development. And herewith is completed our answer to the second general psychological question, viz., the nature of that self-development which is secured through self-activity. The nature of education, psychologically considered, is the realization of the self. The means of education is the activity of the self. It only remains to inquire concerning the characteristics of the educated self. Before passing, however, into the lofty air of this ideal region, we may pause a moment, as often heretofore, in the valley of the practical. These considerations we have had concerning the notions of self-activity and self-development indicate for us certain negative and positive things concerning educational practice.

What Education is not.

At least three things often associated with the conception of education are not truly representative of its nature.

Not a Gift.

(1) Education is not a gift to be bestowed; it is a trophy to be won. It is not the transmission of mental power from teacher to pupil; it is making latent mental power in the pupil kinetic. It is not a divine gift of tongues from the teacher, but a human, hard-earned victory for the pupil. "The telling teacher is not the telling teacher." Education is not a jack-knife to be presented, it is an intellectual pilgrimage to be taken. The teacher is not the pupil's "pony," but his experienced travelling companion.

(2) Education is not receptivity, but activity; not impression, but expression; not learning, but thinking; not knowledge, but power. In the matter of becoming educated, as elsewhere, it is more blessed to give than to receive. Pupils usually lose what the teacher gives them; they usually keep what they give the teacher. The mind is developed not by receiving knowledge but by winning it; not by having the beauties of the world catalogued for it but by discovering them under guidance; not by having the moral quality of every deed labelled upon it but by self-direction. Only at the risk of falling into the erroneous, the ugly, and the bad is the mind established in that which is true and beautiful and good. Not Impression.

(3) Education is not primarily fitting a child to do something; it is getting him to be something. It is not primarily utilitarian, but cultural. The notion of being is more comprehensive than the notion of doing; one must be something in order to do something; out of the fount of being flows the stream of achievement. It is as serviceable to learn to do by knowing as it is to learn to know by doing. The ideal of the liberal education is being; of the technical education is doing. The former underlies the latter. There is no short-cut to real achievement; the long route of personal development is the only one. One must travel the way of self-development, and behold in the way the visions of truth, before he can fully enter upon the self-devotions of life. Not Utilitarian

We must distinguish in our thinking between what education is and what it is for, between its nature and

its end. Milton and Herbert Spencer have admirably defined for us the end of education, but we must go to Pestalozzi for a definition of its nature. Milton says, "I call a complete and generous education that which fits a man to perform justly, skilfully, and magnanimously all the offices, private and public, of both peace and war." Spencer's most famous statement is, "To prepare us for complete living is the function which education has to discharge." Pestalozzi touches the quick of the matter in his notable figure: "Sound education stands before me symbolized by a tree planted near fertilizing waters. A little seed which contains the design of the tree, its form and proportions, is placed in the soil. See how it germinates and expands into trunk, branches, leaves, flowers, and fruit. The whole tree is an uninterrupted chain of organic parts, the plan of which existed in its seed and root. Man is similar to the tree. In the newborn child are hidden those faculties which are to unfold during life. The individual and separate organs of his being form themselves gradually into an harmonic whole, and build up humanity into the image of God."

The Use of the Stages of Mental Growth in Educating.

In contrast with what education is not, the brief survey we had of the stages of mental growth in self-development suggests unavoidably certain positive matters of which education should take account.

Adjust Subject-matter to Pupil's Mind.

(1) Education ought to help, and not to hinder, nature in the work of carrying the mind through its stages of growth. This the practice of education can do in two ways. First, there ought to be an adjustment effected between the subject-matter of the cur-

riculum and the stage of mental development of the pupil. Fairy-tales for the child, history for the youth, and philosophy for the man will illustrate. To attack a subject before the mind is ready for it is to do injustice to the subject and injure the self-confidence of the mind; it may also lead to over-development of the mind for its age. To come upon a subject after the mind has passed by the psychological moment of readiness for it, is to bring contempt upon the subject and insult the mind; it may also lead to arrested mental development. "In all pedagogy the great thing is to strike the iron while hot, and to seize the wave of the pupil's interest in each successive subject before its ebb has come, so that knowledge may be got and a habit of skill acquired — a headway of interest, in short, secured, on which afterward the individual may float. There is a happy moment for fixing skill in drawing, for making boys collectors in natural history, and presently dissectors and botanists; then for initiating them into the harmonies of mechanics and the wonders of physical and chemical law. Later, introspective psychology and the metaphysical and religious mysteries take their turn; and, last of all, the drama of human affairs and worldly wisdom in the widest sense of the term. . . . To detect the moment of instinctive readiness for the subject is, then, the first duty of every educator."[1] This necessity of effecting a timely conjunction between the subject-matter and the pupil's mind is the basis for the "Culture Epochs" of the successors to Herbart.

(2) There ought also to be a progress in method

[1] James, "Briefer Psychology," pp. 404–405.

Stages of Method.

of instruction corresponding to the stages of mental growth. "When I was a child, I spake as a child, I understood as a child, I thought as a child, but when I became a man, I put away childish things." The methods of teaching men are not the methods of teaching youth or children. The method of teaching is the manner in which the subject-matter is presented to the learning mind. In general, children must be taught by the method of illustration; youth by the method of combination, that is, showing the connections that exist between different things or successive events; and men by the method of system, whereby unities, total points of view, and vision, are secured. Children must see, youth must understand, men must reason. There must be a happy conjunction between the method of the teacher and the capacity of the pupil. Only so can "boyhood ripen in boys, youthhood in youth, and manhood in men." This suggestion was worked out in considerable detail by Herbart himself in the so-called "Formal Steps of Teaching."

The Child and the Race.

(3) It is customary to assert that the stages of mental growth in the child repeat those of the race. The "Culture Epoch" theory implies this. Biology suggests the same principle in the physical realm, ontogeny repeating phylogeny. The claims of psychophysical parallelism are thus very neatly supported by the theories of mental and physical evolution. As usual, the poets have anticipated by intuition the observation of the scientists.

> "There is a history in all men's minds
> Figuring the nature of the times deceased."

But it would seem after all that only in general does the child repeat the experience of the race. For an organism is the product of heredity and environment and "organic selection," that is, its own unique responses to stimuli. This last element indicates a certain amount of self-determination even in the physical organism. The environment is also a variable element in its influence, since from age to age its complexion is changed. Heredity itself, though the least variable perhaps of all the three elements that go to make an organism, is yet not constant in its transmissions. Whence it happens that it is quite possible for an individual child to begin somewhere short of the "tooth and claw" stage of primitive existence, even to omit some of the original epochs, to inherit mainly from a mediæval instead of an ancient æon, and to pass quickly by means of good home and kindergarten supervision into modern civilized childhood. Let teachers no longer feel under the necessity of regarding children as little savages. Children they are, clad in the garments of ancestral possibility, with animal fears and angers lurking in the recesses of their nervous systems, but also wrapped around with a human heritage too from more generations than can be numbered, and bearing in their bodies the insignia of noble rank and infinite dignity. Let the child not run wild because he is a potential animal, but train him up in the way he should go because he is a potential man.

These considerations complete for the present our breathing-spell in the atmosphere of the practical.

Having now seen the nature of that mental activity

The Characteristics of an Educated Mind.

which leads to mental development, and the nature of the notion of mental development as the psychological result of education, it remains for us to answer our third question, and attempt to describe in some detail the characteristics of a developed mind. The answer to this question is both general and specific.

The General Answer.

In general the qualities of an educated mind are, as the preceding discussions have fitted us to appreciate, the power to know, the power to feel, and the power to will. Education takes the natural forms of consciousness and raises them to greater efficiency. The educated man above others is possessed with truth as the outcome of his power to know, of beauty as the outcome of his power to feel, of goodness as the outcome of his power to will. It is an incomplete education that omits or neglects any one of these three. The power to know, when exercised, makes the scholarly man; the power to feel, when exercised in the appreciation of the æsthetic in nature and the ideal in persons, makes the gentle and sympathetic man; and the power to will, when exercised in its true direction, makes the honorable man. The scholar, the gentleman, and, with our form of faith, we may add the Christian, are the natural psychological ideals of human education.

Like begets Like.

Each of these phases of consciousness, viz., knowing, feeling, and willing, is dominantly developed, it will be noticed, by that element in the spiritual environment which it itself in the history of the race supplied. Through sciences we learn to know, through arts to feel, through volitions to will. In things of the mind like is nourished by like. Because of the

unity of the human mind, however, each division of the curriculum influences the whole mind as well as that phase of mind to which it particularly appeals; just as in the social achievement the whole mind as well as one of its functions was operative in producing each distinctive product. The unity of mind in its three ultimate modes is like a single cord composed of three strands. In its action it is like the human body which as a whole does things while calling into play one part particularly.

This is our general answer to the question as to the qualities which education develops in consciousness. The specific answer must take the form of an enumeration in some detail of those particular and essential traits which betoken the educated mind.

The Open Doors of Consciousness.

(1) The doors of the mind are open. This means two things, viz., the senses are responsive to all the stimuli of the world they are capable of receiving, and the mind is ready to receive whatsoever things are true, lovely, and of good report. The senses are the only avenues of approach to the mind which the world has. These avenues, particularly those of sight, hearing, touch, and the muscles, should be unobstructed and usable. The senses are intended to report the data of knowledge, so far as they can, as it exists in nature. There is a great wealth of natural fact from which the unaided senses are excluded, such as the very minute, the very remote, the intermediate wave-motions between hearing and seeing, and the very high wave-motions, which makes it the more important that the senses of even the unscientific observer report well what they can report at all.

To-day most men are shut off from the pleasures the naturalist experiences in the woods because having eyes we see not, and having ears we hear not, and having minds we comprehend not the messages nature would be continually giving us.

The term, *the senses*, has come also significantly to connote an intellectual quality, as when we say, "He came to his senses," meaning he regained consciousness, or his rational self-control. The best intellect is impossible without the best use of the senses. Without open senses, the mind cannot be open.

The educated mind is open to receive, and welcome, and utilize, and enjoy the beauty of unadorned truth and the truth of simple beauty. A willingness to know, a readiness to listen, a desire to be convinced, an attitude of candor, an honesty of the intellect, — these things are wrought into the fibre of the developed mind. That immorality of the intellect which withholds, distorts, minimizes, or refuses to acknowledge, the truth, is characteristic of unrounded minds, and is the greatest impediment to progressive thought. The action of the immoral intellect is to be distinguished from that of the wise teacher who has many things to tell his pupils when they can bear them. This is the necessary adjustment of truth to life to secure comprehension of the truth and uplift of the life. It is a test too severe for undeveloped minds to welcome personally disagreeable truth, and even the educated man must love God with all his mind before he is sufficiently humble to pass the test smilingly. To such a man the whole truth is dear; he has faith

in its capacity to stand alone without artificial supports, such as the decrees of councils and the sayings of high officials. These things were said because they were true; they were not true because they were said. The open mind is stifled in a closed system of truth; as well exclude from the lungs the free winds of heaven! Truth is the interpretation of life, and so truth is continually revealed as life progresses. The open mind, so far from staying the growth of truth, assists it on its saving way.

(2) The treasure-house of the mind is well filled. When all is truly said against knowledge as the sufficient end of education, still it remains true that the educated man must know something and know it well. He cannot know everything, — the accumulated knowledge of the race is too vast and the rate of human learning too slow, even if encyclopædic information were a desirable educational aim. But as the result of the activity of the intellectual aspect of consciousness, the educated man has a wide knowledge of the large and essential facts of men and things and exact knowledge of that field of fact wherein he proposes to devote his life. His knowledge is general enough to make the universe seem like home, and specific enough to make his work in the world a profit to others and a pleasure to himself. Without such knowledge, man's sympathies are contracted and his services slight.

Self-knowledge.

(3) Self-knowledge. The educated mind has become acquainted with itself. In its voyage of discovery round the world, it has found something of itself in everything, and has finally come to itself.

An educated man knows his strength and his weakness, and is content to work within his limitations. At some time during the educative process the searchlight of learning discovers to the student his special ability, and thereafter his capacity is his calling. Once for all his mind is awakened. Such a vision of his forte stabilizes his life by setting a solid end in view, to work toward which is not dreary drudgery but an invigorating pleasure, because it is self-expression.

After describing many interests of youth that had their day and ceased to be, Professor Munsterberg[1] reports in his own case that finally "the lightning struck" when he came to psychology. Of such a moment of self-knowledge, President Eliot writes:[2] "When the revelation of his own peculiar taste and capacity comes to a young man, let him reverently give it welcome, thank God, and take courage. Thereafter he knows his way to happy, enthusiastic work, and, God willing, to usefulness and success." In an unpublished educational address, President Tucker has said: "Education is the process whereby a man learns to find himself and to make sure of himself, that is, self-knowledge and self-reliance." The second quality here mentioned, viz., self-reliance, we have to mention later as another characteristic of the educated mind.

Imagination.

(4) Imagination. The sciences, the arts, and the volitions tend to call out the imaginative powers of consciousness. In science it is the imagination that

[1] *Atlantic Monthly*, May, 1900, Article, "School Reform."

[2] "Educational Reform," p. 12.

frames hypotheses for observation and experiment to verify. In his essay on the scientific uses of the imagination, Professor Tyndall writes:[1] "Bounded and conditioned by coöperant reason, imagination becomes the mightiest instrument of the physical discoverer. Newton's passage 'from a falling apple to a falling moon' was a leap of the imagination. . . . In fact, without this power our knowledge of nature would be a mere tabulation of coexistences and sequences. We should still believe in the succession of day and night, of summer and winter; but the soul of force would be dislodged from our universe; causal relations would disappear, and with them that science which is now binding the parts of nature to an organic whole."

In the arts the imagination is stirred as the mind comes into sympathetic appreciation of the object of beauty. It was through the productive imagination, recombining old elements in new forms, that the work of art was made. The builder, the sculptor, the painter, had in mind the image of their work before hand was laid to tool. The emotions supplied the heat, the glow, the impulse, the longing to produce, to which the imagination gave definite form and direction. Perhaps the musician and the poet do not always so imagine their work in advance, but sit down with noble and uninterpreted emotions to express, to which the expression itself first gives shape and definiteness.

And in the volitions, particularly in history, the imagination is called into play as the mind vividly

[1] "Half Hours with Modern Scientists," p. 250.

reproduces the stirring scenes and their settings from out the past. Without this imaginative reading, history is a record of dead things. With it, history lengthens our lives by thousands of years into the undying past.

Since writing this account of the imagination as one of the essential characteristics of the educated mind, President Eliot has made his great address on "The New Definition of the Cultivated Man" before the National Education Association in Boston, in which, after stressing character, language, and the store of knowledge, he estimates the imagination as follows: "The only other element in cultivation which time will permit me to treat is the training of the constructive imagination. The imagination is the greatest of human powers, no matter in what field it works — in art, or literature, in mechanical invention, in science, government, commerce, or religion, and the training of the imagination is, therefore, far the most important part of education." He continues, "I use the term *constructive imagination*, because that implies the creation or building of a new thing."

With this conclusion I dissent, in favor of the training of the next mental power to be mentioned, viz., the judgment, and for the following reasons. Nature has endowed but a small fraction of the human race with the capacity to create. The Dantes, Goethes, Shakespeares, Darwins, and Pasteurs of the world are very rare. Such creative minds, furthermore, have been and are mostly beyond the assistance of the school, though the school ought now to begin the attempt of discovering them to themselves.

Neither is it necessary for either the maintenance or the progress of human society that the mass of men be creators, as the past and present prove. On the other hand, nature has endowed a vast majority of the human race with the capacity, when developed, to judge safely and well. This natural sanity of mind the school can cultivate. And it is necessary for both the permanence and the progress of human society that a majority of its members be men of good judgment, not subject to every newly created theory, whether it be true or false, as both past and present abundantly prove. It is through the power of good judgment that the imagination is tempered in its flights, that worthy characters become the object of earnest endeavor, and that sanity is established as the order of human society. It is judgment that distinguishes the true from the false, the beautiful from the ugly, and the good from the evil. It must be then that the school, as the minister to both society and the individual, finds a less important function in the training of the imagination than in the training of the judgment.

Judgment.

(5) Judgment. The educated man has a trained judgment. Judgment is the mind's power to comprehend and estimate situations, whether facts or principles. It is the highest intellectual power. It is the power to think. It comes as the result of training. The man of judgment is the man of intellectual power. It is the main characteristic of a liberal education received at Harvard fifty-eight years ago, indicated by Senator Hoar in the following words (and which to-day he finds lacking in a conspicuous degree):

"There was something in the college training of that day, imperfect as were its instruments, and slender as were its resources, from which greater intellectual strength in the pupil was begotten, than there is in the college training of the present generation. I will not undertake to account for it, but I think it was due, in large part, to the personal quality of the instructors. . . . The difference in the capacity of a college graduate to deal with any matter requiring intellectual power, and that of a man who had not got that education, was marked and unmistakable. I do not know how to account for or to reason about it, but Alma Mater brought up her boys to be better boys and to be better men, to serve the state better in war and in peace, to be better citizens and better soldiers than could be found elsewhere."[1]

What are the elements of a trained judgment? (*a*) The ability to see the facts clearly and accurately whose sense data are reported. The mind is trained to interpret the sense data aright. (*b*) The trained judgment generalizes safely. Generalization is the power to unite facts in principles. The trained judgment waits until sufficient facts are in to make a safe statement about their meaning. It interprets aright. This is insight. (*c*) The trained judgment deduces validly. Having a general principle as the interpretation of the meaning of facts, it sees what follows from it; it understands how to investigate and interpret these new facts. This gives a mastership of future experience. This is foresight. (*d*) The trained judgment appears in a certain consistency and

[1] *Scribner's*, July, 1900.

connectedness present in mental products. The bearings of fact on fact, of principles on principles, of truth on truth, are recognized. The interrelation of the different parts of reality appears. Such judging repeats mentally the systematic nature of things as they are; such thinking is like a seamless robe. This absence of gaps, this presence of transitions, this vision of both sides at once, this perception of the systematic nature of truth, is the finest fruit of the trained judgment, as the trained judgment itself is the finest fruit of the trained mind.

To summarize, the trained judgment reports facts as they are, sees their meaning, foresees their consequences, and glimpses the whole of which they are fragments. Judgment is the mind's assertion about reality; it reaches beyond the content of individual consciousness and lays hold of that which is objectively true; it is the typical act of intelligence in its effort to comprehend its world.

The training of the judgment is unfortunately not so common a product of modern education as we could wish to see. Remembering the words of Senator Hoar, let us note also the following criticism from Professor Faraday: "Let me next endeavor to point out what appears to me to be a great deficiency in the exercise of the mental powers in every direction: three words will express this great want, *deficiency of judgment.* I do not wish to make any startling assertion, but I know that in physical matters, multitudes are ready to draw conclusions who have little or no power of judgment in the cases; that the same is true of other departments of knowledge; and that,

generally, mankind is willing to leave the faculties which relate to judgment almost entirely uneducated, and their decisions at the mercy of ignorance, prepossessions, the passions, or even accident. . . . *I will simply express my strong belief, that that point of self-education which consists in teaching the mind to resist its desires and inclinations, until they are proved to be right, is the most important of all, not only in things of natural philosophy, but in every department of daily life.*"[1]

Taste.

(6) Taste. The mind's judgment on beauty is taste. Through taste the beautiful and the sublime in the works of man and God become objects of mental perception and enjoyment. Such pleasure is a pure gain, no sorrow is mingled therewith. Here the mind rests content in the perfect; or else, in the presence of natural sublimity it rises trembling into the infinite. Through judgments on truth men are made observant; on goodness, energetic; on beauty, appreciative. The finer, higher, and more delicate things of human experience come into consciousness through the æsthetic sense. To omit it is to be intellectually cold or morally austere or both; to possess it is to walk in the more excellent way of sympathetic communion with the best in nature and man. The air of refinement, the atmosphere of culture, the sense of the perfect, the love of the ideal, belong with the essential characterization of the educated person. They are the natural birthrights of the human being, and neither economic opportunity nor material prosperity nor unæsthetic education should steal away

[1] Quoted from Youman, "The Culture demanded by Modern Life," pp. 189, 205.

these unmarketable but priceless possessions from the soul of man.

It is important here to bear in mind that unity of consciousness which occasionally has forced itself upon our recognition in the progress of this discussion. The judging activity of consciousness is one, though its field of operation is threefold, viz., concerning truth and error, beauty and ugliness, and goodness and evil. In the first case we have what is commonly called judgment; in the second, taste; and in the third, conscience. Taste is judgment in the æsthetic field (Kant limited "judgment" to this field); conscience is judgment in the moral field. The judging activity is the same, the objects judged differ. Of course this is not to deny the response of the feelings, of the sensibility, to truth, beauty, and goodness, but such responses get definition and estimation only through the act of judging. To conscience we next come.

Conscience.

(7) Conscience and character. The mind's power of judging, we saw, can be directed to that which is good, as well as to the true and the beautiful. Conscience is judgment concerning right and wrong. Character is what one is in consequence of what he wills to be. The good reported by conscience is the highest object of will. No man is properly educated whose will falls short of its noblest end. Where immorality is, there education has not had its perfect fruit. It is the will-aspect of consciousness about which judgments of worth centre.

To some thinkers, notably Kant, a good will is the only thing of absolute value in the world. To such

minds the formation of moral character is the chief, if not the only, end of education. To Hegel education was "the art of making men moral." This conception of the purpose of education is most prominently associated with the name of Herbart, who found it in Kant. To quote one of the Herbartians: "If Kant and Herbart are right in claiming that the will is the proper object of all ethical valuation, it certainly follows that the ethical culture of the will must be regarded as the highest purpose of education."[1] And again, "Education, both as a national and social factor, must above all construct character."

While affirming with these post-Kantians the unique value of the will as embodied in morality, our own conception of the end of education has been very much more comprehensive; indeed, as comprehensive as the nature of the mind itself. This larger view is justified as soon as it becomes evident that a good will without intellect is undirected, and without emotion is powerless.

The Habit of Work.

(8) The habit of work. The educated mind has accustomed itself to the performance of tasks, which are now done well because they are done easily. The power of concentrated and continued attention has been developed through long practice. Large mental labors are planned and performed without waste, worry, or fret. The untrained mind wastes time in attacking work and worries through its painful and poor performance. The trained mind quickly discovers itself in a certain skill of execution, a certain air of mastery, a certain manner of self-confidence,

[1] Rein, "Pedagogics," p. 88.

and, especially, a certain pleasure in performance. Without the habit of work on the part of trained minds, the productivity of society would cease.

(9) Freedom. The educated man has the mental freedom that comes from a knowledge of the truth. The bondage of ignorance is broken, the slavery of fear is abolished, and the subjection of superstition is removed. Only the sovereignty of truth is admitted, only the perfect law of liberty is regnant. The intelligence has been emancipated from the sway of decreed truth and freely yields itself to the leadership of acknowledged truth. In this spirit of truth the soul of man is guided into all truth, the development of personal power is unhampered, and individualities are set free. To and through every finite soul the Infinite has a message to deliver. There may be uniformity of individual insight into truth, there should be no conformity of one man's mind to another man's truth. The limitless quality of truth permits every individual to possess in it a personal, instead of a proxy, interest. Such freedom of the educated individual leads naturally also to

Freedom.

(10) Tolerance. To recognize the mental freedom in others which one enjoys himself is tolerance. It implies sympathy as the acknowledgment of the fundamental unity of human life. Where such sympathy is lacking, one is presented with the frequent and sad spectacle of freedom becoming intolerant, the Protestant becoming dogmatic, the Puritan becoming persecutive. A liberally trained man is as willing to share, as he is unwilling to lose, the freedom he enjoys. When the sun of truth is shining in the sky,

Tolerance.

to every voyager on the ocean of life its beams are reflected from the water as to himself alone. This free and unobstructed view is his inalienable right. An imaginative sympathy must widen his vision enough to recognize the identical right of others. Tolerance refuses either to force others into its boat or to put others in its shadow. With tolerance the course of life's voyage is independent, free, and happy; without it, the central luminary of truth, lighting every man that cometh into the world, is obscured by the figure of man.

Happiness.

(11) And finally, the educated man is happy. Happiness consists in the possession and use of one's full powers. He knows the truth, and the truth has made him free. He feels the beautiful, and the beautiful has made him gentle. He wills the good, and the good has made him strong.

The Psychological Ideal of Education.

The briefest survey of these characteristics of the educated mind suggests that the end of education is a rounded and complete personality, *integer vitæ*. It remains to be remarked that this conception of education is an ideal; it is not an achievement but a process. The ideally educated man as described above does not and can not exist. The individual cases of educated men that one meets, present either arrested development in some direction or over-development, or both. As Dr. Donaldson[1] has reminded us: "The avowed aim of certain educational schemes is to produce a rounded, balanced individual as an outcome of the training process, a psychological result comparable with the ideal human

[1] "Growth of the Brain," Chap. XVIII.

form sought at one time in sculpture. Since conditions of life on the globe are not uniform, and since man only approaches the ideal in his development when in harmony with his surroundings, such an ideal is as fanciful as Goethe's *Urpflanze*."

From the character of the ends pursued, too, it is evident that the ideal thus set for us is unattainable in a temporal process. The truth, goodness, and beauty pursued in the educational process of complete self-development are infinite ideals. The truth without error, the good without evil, the beautiful without the ugly, — these are the content of an absolute consciousness, whose perfection is possible through the imperfections of our present temporal order. The completion of man's education, then, ending in his attaining these infinite ideals, would require an infinite time. In other words, the completely educated man, as herein defined, does not exist to-day or any day. Rather, according to Addison's beautiful figure, does the finite approach the infinite as the mathematical curve its limit, ever nearer and yet never there; our imperfection leads us not into the darkness of despair but into the glory of hope. To the full implication of these considerations we must recur in the following chapter. There it may appear that in our present imperfection of educational attainment lies deeply the significance of life and the prophecy of our perfecting.

> "And what is our failure here but a triumph's evidence
> For the fulness of the days?"

Meanwhile, let not the pains we have here taken to show that our ideal of education as defined is

unattainable, blind us to its value for us. Even as it escapes us pursuing does it regulate our pursuit. Even as it, rising heavenward, leaves us far behind upon the earth, does the mantle of its influence cover us. Plato replied truly it was no objection to the Republic to say that it did not, and could not, exist upon the earth. "The light that never was on land or sea" still is "the master light of all our seeing." Our educational work has value in proportion as it embodies the ideal of complete self-realization.

There are two terms in common usage, occasionally employed by us already in this discussion, which indicate those approximations to self-realization which the school can produce, and which summarize the situation of the educated mind, viz., culture, and a liberal education. A few words of description of each of these terms will serve to clarify further the conception of that development of mind which education, psychologically considered, aims to secure.

The Nature of Culture.

The term *culture* is fallen undeservedly into some disrepute. The grounds for this, though actual, are, however, not such as really inhere in the nature of true culture. The term is often disliked because it reminds us of our imperfections; but this it does not to condemn us but to lift us. Its possessors we imagine often as thinking of themselves more highly than they ought to think, and as disapproving of others; but such is not the case with that true culture wherein the sense of the still unattained is always present. Nor is culture selfish, but coöperative and willing to communicate its good things, for its presence is due to the reception of the best from

all, which carries with it the duty of giving the best to all, according to the meaningful motto, *noblesse oblige*.

The cultured mind literally is the *tilled* mind. Just as the culture of the soil precedes its finest products of plants and flowers, so the culture of the mind precedes its finest achievements. The tilled mind displays the natural virtues resident therein; it has a zealous love of the best things in life; it is devoted to the ideal; it worships the perfect. Culture seeks the sweet reasonableness, the eternal fitness, and the beautiful holiness of things. To quote neither from Aristotle nor from Arnold, who have compassed this field of sweetness and light in so final a fashion, but from the wonderfully brilliant Martineau: "Its [culture's] zeal is spent upon the highest elements and finest fruits of civilization, — the increase of knowledge, the refinement and sincerity of art, the purification of religion. It secures, therefore, a genuine liberality of mind, a sympathy with whatever makes man intelligent, gracious, and noble, and a delight in rendering this, as far as possible, common to all . . . the love of culture is selective; and he in whom it is represented is an epitome of the higher faculties and influences of our life; with sympathy less diffused over men as they are, than concentrated on what they might be and are to be. . . . Nothing can be more happily distinctive of the liberal-minded man who impersonates our spring of action, than this feature, that he would rather *teach* his fellow-men than *rule* them."[1]

[1] Martineau, "Types of Ethical Theories," Third Ed. Vol. II, p. 214.

Such culture is not antagonistic to the element of force in personality, though the combination is rare. Culture is broad; force is narrow, for vigorous action is always along definite lines. But a man may act and still have a zealous love of the best things; such cultured action will be careful and discriminating, and it will do no violence to the sense of values. Iconoclastic action and culture are not consistent, but "intelligent, gracious, and noble" action can emanate only from the cultured soul. Thus while culture clips the wings of violence and cripples injudicious, ungracious, and ignoble action, it is wings to the feet of the messenger of light and life.

The following words of President Eliot will concrete our discussion of culture as a serviceable synonym for the educated mind: "The worthy fruit of academic culture is an open mind, trained to careful thinking, instructed in the methods of philosophic investigation, acquainted in a general way with the accumulated thought of past generations, and penetrated with humility."[1]

A Liberal Education.

A liberal education, we were saying, is a term also commonly employed to signify what the school, particularly in its higher forms, gives the individual. A change has occurred in the meaning of this term since the great days of Greece which is indicative of a wonderful widening of the educational ideal. The Grecian liberal education was for the free man, implying the existence of the slave class; the English liberal education is still for the gentleman, implying the existence of the laboring caste; the American liberal education

[1] Eliot, "Educational Reform," p. 8.

is for man as man, without qualifications, implying the equal rights of all to free self-realization. So radical a reformer of human society as Plato did not discern the possibility of universal education, providing as he does in the Republic for the training of artisans only by custom and experience. Aristotle, the most catholic mind of Greece, if not of the whole world, described a cultured leisure as the ideal of education from participation in which a large majority of the human family, the workers, were necessarily excluded. The effort of the cosmopolitan English nation to make their founts of learning flow freely for even their home people is a record of only one generation, and even this educational stream, started toward universal service, has had its back eddies and counter currents. In the American democratic form of government the idea of universal education has found freest historic expression and fulfilment. Here a liberal education is defined not as that intended for the free man, nor even as that intended for the gentleman born, but, to quote Professor Ladd, "by a justifiable turn of meaning, a 'liberal education' may be defined as that which makes the free mind, which furnishes the liberalizing culture of the trained gentleman." [1] A liberal education emancipates individuality, sets free personal powers, and widens the human outlook.

It is characteristic of the education that liberalizes the human spirit that it be non-professional and non-technical. Whether an education be liberalizing or not depends not so much upon the subjects studied as

[1] Ladd, "The Higher Education," p. 114.

upon the spirit in which, and the purpose for which, they are studied. It was a great mistake of the advocates of the old prescribed curriculum, as against the introduction of the newer elements like history, the modern languages, and science, to suppose that these latter subjects were not liberalizing because they could be serviceable. It was also a mistake to suppose that the pursuit of Latin, Greek, and mathematics was always liberalizing, even when the prospective teacher or minister was intending to profit by them. A liberal study is one pursued for its own sake; a professional study is one pursued for the sake of its application. Any subject in the University catalogue may be either liberal or professional, according to the student's attitude thereto. The study of biology will liberalize a ministerial student more than the study of Greek; the study of Greek will liberalize a medical student more than the study of biology. The pursuit of any study for its own sake widens the personality of the student to cover the new territory; the pursuit of any study for the sake of applying it narrows the personality of the student into the channel of action. It is like two men walking together in the fields, the one with open mind enjoying all he meets and sees, the other with focussed mind hunting for specimens; the self of the one is absorbed in his environment, the environment of the other is absorbed into his self; the one makes the universe the measure of himself, the other makes himself the measure of the universe. It is known that the educational value of manual training is greater when the student's mind is bent toward his task rather

than toward its proceeds. It is not the particular study going into a man's mind that liberalizes him; it is the spirit coming forth from the man's mind as he studies. To study any subject in a self-forgetful, disinterested fashion is broadening; in a self-seeking, partial fashion is narrowing. Liberalizing work is interesting, not interested.

As a corollary to the non-professional, non-technical, character of a liberal education goes also its unspecialized quality. It is only through the gate of specialization that one enters the field of professional service. It is the college as the fruition of the preceding educational agencies that is particularly designed to secure the liberal education, with its historic bachelor's degree as the symbol thereof. Because of the unspecialized character of a liberal education, the colleges have regularly been cautious to prevent specialization through the requirement of at least a sufficient number of representative studies to secure a living interest in all things natural and human. After such a broadening, into howsoever narrow channels of action the streams of personality may later flow, they will be deep. The length and breadth of the college is the best preparation for the height and depth of the professional school. Any disadvantage accruing from the later acquirement of technique in the professional schools is offset by the advantage of bringing a broad personality from the college. A well-trained mind with a less adaptable hand is better than a less-trained mind with a more adaptable hand, as an equipment for professional study. First a man, then a workman; first be, then do; first make

life worth living, then make a living in life; first righteousness, joy, and peace in the inner man, then an abundance of possessions. The lawyer, the doctor, the engineer, are men as well as professionalists. They are citizens, they are friends, they have homes, they live in the wonderful world, and their horizon should not be limited by the courtroom, the hospital, and the factory. Just as specialization with a broad basis is the highest safety of society, so specialization with a narrow basis is a menace to society. As John Stuart Mill says, "A man's mind is as fatally narrowed, and his feelings toward the great ends of humanity as miserably stunted, by giving all his thoughts to the classification of a few insects, or the resolution of a few equations, as to sharpening the points or putting on the heads of pins." Those professional schools which aim to send experts into society to alleviate increasingly the lot of man through the lofty passion for noble service will favor the current tendency to require a bachelor's diploma from a reputable college of their applicants for admission. On the other hand, those professional schools which aim to provide society with servants of special technical equipment without great regard to prior general training will continue to demand the abbreviation or omission of the college course. It may be that in the complexity of human needs each kind of professional school will find its peculiar function, but the existence of the former is indispensable for the enrichment of society.

America has always demanded the application of its educated power. Whether the education be lib-

eral or technical, or both, it must always do something in the end. Unlike Greece, America has felt that the educated class was not apart from society but a part of society; unlike England, America has felt that the application of science is not vulgarizing but elevating. Catholicity and equally extensive serviceableness have been the distinctive notes of American liberal education. As President Wheeler has recently written, "The American passion for sweetness and light will be fulfilled in such as are not knowers only, but doers of the doctrine." [1]

Despite the fact that America stands for the education of man as man, in practice our society falls distressingly short of this lofty ideal. As Professor Dewey writes, "Hardly one per cent of the entire school population ever attains to what we call higher education; only five per cent to the grade of our high school; while much more than half leave on or before the completion of the fifth year of the elementary grade." [2] Thus liberal education to-day in the freest of lands and at the acme of historic educational progress is still for the few and not for the many, as it was in the old unchristian days of Aristotle. Through emphasis upon the basic idea of equal opportunity to all men upon which the American Commonwealth rests, through the enlightenment of public opinion as to the true scale of values in life, through a quickened sense of the educational duty of parents to children and of man to himself, through a heightened recognition of what education does for

[1] The *Atlantic Monthly*, July, 1903, "A National Type of Culture."
[2] Dewey, "The School and Society," p. 42.

the individual and for society, it is incumbent upon all true Americans everywhere to extend increasingly the unmixed blessings of a liberal education.

There are certain famous words of Huxley so fitly spoken, like apples of gold in pictures of silver, that we cannot do better than conclude this present discussion with them. He writes: "That man, I think, has had a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold, logic engine, with all its parts of equal strength, and in smooth working order; ready, like a steam-engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with the knowledge of the great and fundamental truths of Nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of nature or of art, to hate all vileness, and to respect others as himself.

"Such a man and no other, I conceive, has had a liberal education; for he is, as completely as a man can be, in harmony with Nature. He will make the best of her and she of him. They will get on together rarely; she as his ever beneficent mother; he as her mouthpiece, her conscious self, her minister and interpreter."[1]

We have now given our answer to the three ques-

[1] Huxley, "Science and Education," p. 86.

tions that cover the psychological aspect of education; we have seen the nature of that self-activity whereby mental development is reached, the nature of that mental development which, psychologically considered, is the end of education, and the detailed characteristics of the developed mind, together with its general description in terms of culture and a liberal education. Psychology has added to our preceding definition of education the element of mental development. It remains now to combine this result with those biological, physiological, and sociological conclusions earlier reached in our next definition of education as follows: *Education is the superior adjustment of a physically and mentally developed conscious human being to his intellectual, emotional, and volitional environment.*

Fourth Definition of Education.

There are other definitions of education that might be framed which would perhaps be more elegant in expression but doubtless less adequate in content. One might say with truth that education is self-development through self-activity for self-hood and social service. This definition is adequate from all points of view except the biological, which insists that education must provide the individual with proper adaptation to his environment. "Self-hood" means the state of possessing the self's realized powers. This definition is convenient in that, to the nature of education as self-development, it adds the means in self-activity, and the end in self-hood and social service.

Other Definitions Education.

It might be an interesting but hardly a profitable undertaking to pass in review the historic definitions

of education from Plato to Spencer with a view to comparing them with our own. It would be mostly a verbal display. Suffice it to say that most definitions of the educational reformers stress truly one or more of the aspects of education, without presenting that comprehensive view which it has been our purpose to obtain. Bacon's definition, to take an example, emphasizes the intellectual element, when he says, "Education is the cultivation of a just and legitimate familiarity betwixt the mind and things."

The Making of a Man.

But there is one rather common and decidedly too eulogistic description of education which deserves comment. The classic statements of the great Kant may be taken as illustrating this conception. He writes: "Man can only become man by education. He is merely what education makes of him."[1] But education is something less than the making of a man. There are at least three elements in the making of a man, viz., heredity, environment, and effort. Many scientists would prefer to reduce the three to two, and say that heredity and environment are enough. But perhaps the preceding discussions of the nature of history, of self-activity, and of effort, will seem warrant to the reader, as they do to the writer, for including effort, or will, as the third factor. Man, the completed product, is partly born, is partly made, and he partly makes himself. Shakespeare rightly classified the influences that make men in his famous sentence, "Some men are born great, some achieve greatness, and some have greatness thrust upon them." Each of these elements in man-

[1] Churton, "Kant on Education," p. 6.

making is of essential importance; the influences of heredity are latent and lasting all one's life; those of environment are actual and omnipresent, those of effort redirect inherited impulses and overcome environing obstacles. As Hamlet says, "Use almost can change the stamp of nature."

Now our educational endeavors have not as yet been able to include and to manage the fact and influence of heredity, despite Dr. Holmes's famous witticism about choosing one's grandparents. Education has not as yet succeeded in leavening the lump of social opinion sufficiently to insure to the new generation the precious blessing of being well born. And yet the desirability of just this thing was recognized two millenniums and more ago by Plato, who, to effect it in his Republic, made an impossible reorganization of the family life. Education's slow but only hope in getting possession of the influence of heredity is through the patient instruction of the masses.

Of the two remaining elements of man-making, viz., environment and effort, education is in partial possession. The school, with all its equipment of curriculum, apparatus, and teachers, is a large section of the pupil's environment. In the school, through effortful reaction upon the educational stimuli supplied by his environment, and upon his own inherited inclinations, the child becomes father to the man; self-selected thoughts get embodied in deeds; repeated deeds fashion habits; combined habits make character, and character is destiny. Thus education assists, but does not cover, the art of

making a man. This impossible task for it education cheerfully resigns in favor of its more modest, but equally real, service of bringing out what is in man.

The Transition from the Empirical to the Purely Philosophical Discussion.

Herewith is concluded the discussion of the last of the empirical characteristics of the being to be educated, viz., intelligence, following upon the discussion of his other empirical characteristics, viz., life, body, and sociality. We have seen what the nature of education is so far as the empirical nature of the educable being is concerned. Thus far experience. Beyond experience we cannot go, except in thought, by following out consistently to their logical conclusion the clear implications of experience. It may be that folded within the finite facts so far considered are suggestions of deeper truths and higher meanings than have as yet appeared. Even if the educational processes that, as we discussed them, seemed so vital with significance and pregnant with intimations of what must be the truth of truths, the really real, the ultimate fact, even if these invaluable human activities are deceptive, and mean nothing deeper and truer than appears, — this too must be discovered by proper methods of reasoning upon what does appear.

At this point many may turn back and say, Who will show us any further truth than experience discovers? But the philosophically minded will reply that this same experience, to which appeal is made to check the ultimate seekings of the human mind, itself thrusts questions upon us which it does not completely answer, intimates more than it tells, sug-

gests more than it asserts, and implies more than it reveals. To be true to experience then is not to stop thinking at its boundaries but by thinking to interpret the meaning of such fragmentary experience in terms of its implications concerning the infinite and eternal. To such readers the invitation is extended to follow us still as we seek the ultimate nature of education, in view of that characteristic of man, the educable being, which makes him in thought already the inhabitant of an eternal, rational, passionate, and purposeful world. Just as the astronomer is led to assert the existence of an unknown and undiscovered planet through the perturbations that do appear, which planet later experience may discover, so is the philosopher led to assert those things as ultimately true which alone give intelligibility to present facts, and which, too, later experience will correct and verify. As the scientist is the discoverer of fact, so is the philosopher the interpreter of fact. Our one remaining question is, then, What is the meaning of education as hitherto defined? for the answer to which we turn to the Philosophical Aspect of Education.

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CHAPTER VIII

THE PHILOSOPHICAL ASPECT OF EDUCATION

The Method of Philosophy.

THE characteristic method of philosophy is to take what facts it can find in a given field of human experience and seek to determine their meaning. Each such field is itself a fragment of the whole human experience, and our whole human experience appears itself but a fragment, implying for its interpretation the existence of a still larger and inclusive experience within which all meanings get their fulfilment. Any such chosen section of human experience indicates something as to its own final value and lasting significance. The part implies the whole, and the meaning of the part it is that suggests the nature of the whole. The method of philosophy is to construct the whole from the meaning of some of its parts, just as the complete statue or animal is restored by artist or scientist from its bust or bone. Philosophy has no new facts of its own to consider, it has only to consider the old facts in its own new way. Given such fragments of experience as men possess, to restore the whole, that is the problem of philosophy. What must the final truth be in order to do justice to this fragmentary bit of experience as now known? This is the question of philosophy. The instrument of philosophy is thought, as it attempts to follow out in some

final and self-consistent fashion the intimations of partial experiences. The invisible things are really made known in part through the things that do appear, just as Agassiz or Gray could describe the life-history of an animal or plant from tooth or leaf. One thing implies another, things go together, nothing is isolated and unrelated, all things are interdependent in the unity of the whole, — such well-known truths as these philosophy takes seriously, and from such details as it can find it attempts the work of restoration. It is a perfectly legitimate method of mental procedure, as used and vindicated by both science and art; only the whole which philosophy seeks is larger, even reality itself. In brief, the method of philosophy is reflection.

The Question of the Philosophy of Education.

From this definition of its method it is apparent that the question of the philosophy of education is this, what are the implications of education? What does the empirical nature of education as already defined through the related sciences of fact suggest as to its ultimate nature? Philosophy has no new educational facts to present; it asks only concerning the significance of the facts already in. It takes our educational experience, already narrated, as given, and concerning so notable a matter of human life, it reflectively inquires as to its meaning. Just as there is a philosophy of art, religion, the state, human conduct, etc., so is there a philosophy of education. Like these other departments of human life, education has its own facts suggesting meanings in their own way. Its facts, of course, are like other facts in that they are closely woven into our unitary human

life; and the meanings they suggest in their own characteristic way ought also to fit in harmoniously with the meanings already wrought out in the philosophies of other subjects. All facts ultimately mean the same, but they mean the same in their own unique ways; just as signboards on different roads leading to the same city point by different ways to the same goal. Reality is the heavenly city of philosophy and education is one of its signboards.

Two preliminary Generalizations.

A World-process.

What then is the reality as indicated by education? Attempting first to put the facts of education all together so as to view them as one, two things are seen, viz., education is a world-process, and it is a temporal process. Education is a world-process; it is the world at work developing a man into the fulness of his stature. Philosophy with its inclusive view makes us return at once to the broad conception of education as defined in the first chapter; all the experiences of life, as well as those of the school, go into the development of man. Just as it takes all the creative powers in the acme of their exercise to make a man, so it takes all the influences of life to develop a man. Unimaginable ages of creative effort preceded the birth of a human child; unimaginable ages of educational effort must succeed his birth to round out man's power. The heart of humanity in which eternity is set, the mind of man with its eye opened to the infinite, have in our brief span of historic time not yet begun to disclose all their latent secrets to the genial and generous influences of their increasingly educational environment. Education is the process whereby human kind is working out into fruition its

own inner nature; it is man's means of realizing his destination, of reaching his goal of largest power, joy, and service. It is a narrow though valuable sense of the term which limits the meaning of education to the influence of the school consciously brought to bear through the agency of the teacher upon the pupil; in the broadest, truest sense of the term, it is the sum total of the influences of life that educate a man. All things develop the human being, whether home or business, church or state, self or others, joy or sorrow, victory or defeat, life or death. The world is busy while men grow. As Browning sings,

> "I count life just a stuff
> To try the soul's strength on, educe the man."

A Temporal Process.

Education is also a temporal process. Philosophers are not agreed whether time is a characteristic of the ultimate reality or not; that is, some say all reality falls within the stream of time; others say that the stream of time itself flows within the territory of reality. The weight of opinion seems to favor the view that reality is independent of the temporal process, that time is but one of the many ways in which reality exists, but that the temporal process, so far as its nature allows, manifests in finite fashion the non-temporal infinite reality. Education belongs decidedly to the temporal process. In that reality where is no time, any educational process is unimaginable. Indeed, all things in human experience, except the objects of thought, dwell within the stream of time. We think in time but of things, like truth, which are eternal, — before, behind, and beyond, the

growth and decay of time. Time is the presupposition of education, without which as the logical condition of succession, of change from less to more, no development could take place. In time the latent becomes the kinetic, the potential the real, and the actual approaches the ideal. From the fertile womb of time man is born into the world, after which all the events of time combine to nourish him.

It is the growing insight of our own age that the development of organic forms through all the vast periods of uncounted past time is a significant natural process, voicing in long-drawn cadence the word of the Absolute. The one-way, irreversible process of organic evolution is one of the efforts of time to tell the story of the eternal. Just as the nature of justice appeared more plainly to Plato when writ large in the structure of the state, so the nature of reality appears more plainly when writ large through the past centuries of productive change. If the world of matter in its unrepeatable processes of evolution is a parable of the truth, how much more may we expect that the world of mind in its self-conscious development through natural and educational agencies is a revelation of reality? Mental as well as material development must be declaratory of the hidden things. Education is the process of evolution become conscious of itself. The story begun by the fire-mist, the spiral nebulæ, the hot stars, the cooling planets, the inhabitable earth, and the growth of life, ought to be continued in the conscious effort of man to realize his nature and fulfil his destiny. Otherwise the universe cannot complete the story it was able to

begin. As a significant conscious process of development in time, whereby immaturity reaches maturity, and the child becomes a man, education ought to be a chapter in the serial which the universe is writing through time in the heavens and upon the earth. The constitution of things is so well framed to educate man that one is easily led through the gate of education back into that reality whence man came and whither he goes. As the rare Paulsen writes, "Thus we are forced to repeat the demand. Out of all the infinite possibilities construct a world that would have been better fitted than ours to educate man and would have accomplished more." [1]

If the temporal is just man's present inadequate experience of the eternal, is that measure of the eternal which the mind of man can span, is, in fact, in the eternal without which it would be an abstraction, then a significant, notable, and valuable temporal process like education ought to imply in a certain degree the very nature of the eternal. What are these ultimate implications of education? This is the question of the philosophy of education.

In thus seeing that education from the philosophical point of view is a world-process and a significant temporal process, we are led into the very heart of our whole inquiry concerning the nature and meaning of education. Any ultimate meanings we can find in the empirical educational process will reflect brighter light upon the nature of that process itself. It is the lower that suggests the higher and the higher that interprets the lower.

[1] Paulsen, "Introduction to Philosophy" (Tr. Thilly), p. 326.

The implications of education can be grouped about three main concepts, viz., the origin of man, the nature of man, and the destiny of man. The discussion must be limited to the self-consciousness of man, so as to exclude the body, the problems of which belong to the natural sciences. The Implications of Education.

First, as to the origin of man. According to the reflective method of philosophy we must first array our facts and then see their implication. There are three well-known facts of the educational process, selected from the foregoing discussions, which, by suggestion, will partly illumine this subject. The Origin of Man.

(*a*) Education, as a human process with a meaning to spell concerning the truth, seizes upon *mind* as the final useful appendage to the organism in its upward evolution. That which nature by spontaneous variation, the struggle for existence, and the survival of the fit, bestows as its last best gift to the organism, education seizes upon to improve, thus raising evolution from the unconscious natural to the conscious mental plane. The highest type of selective agency of man, — education, lays hold upon the highest selected product of nature, — mind, for further improvement, thereby indicating mind as the highest type of temporal reality. Education by its emphases practises the saying of Sir William Hamilton, viz., "In the world there is nothing great but man; in man there is nothing great but mind." The school and also the other more general educative agencies of civilization lay all their stress upon mind as the most valuable, the most useful, the most real, element in life. Chosen last as the result of Mind is Real.

an incalculably long, prehistoric process of natural selection, mind is become first. Education may be pardoned its ontological boldness if it questions reflectively whether the reality it selects as ultimate is not the ultimate reality. Is not reality mental?

The Absolute Mind is realized.

(*b*) To take the second familiar fact (since philosophy presents us with no new facts) which may provide us with a thread of meaning, to lead us through the labyrinth of the phenomenal into the open place of the noumenal, viz., education shows us a development, the unrealized powers of mind through exercise becoming actualized. But what in the nature of things is the possibility of development? that education inquires which has begun to scrutinize its ultimate bases. Can something develop from nothing? in disobedience of the dicta alike of mediæval scholasticism and modern biology? Can mind come from something not itself mental? the unlike giving birth to the like. Can maturity of mind develop out of simple immaturity? time thus making additions to the sum total of reality as against what might be called the law of the unity and conservation of the Absolute. Can that develop in the temporal process which is not eternally realized? as against the doctrine of the Stagirite that there is no δύναμις without ἐνέργεια. Education finds itself unable to understand how the development of unrealized mind which it secures can occur without implying that, underneath its whole process and giving power at every point, is the one realized mind. Not a first cause in a temporal series of events does education reflectively and vainly seek, but an adequate cause of its great cen-

tral fact of development. This it satisfactorily finds only in the existence of a mind which needs no development itself, and so can guarantee the fruitfulness of all educational efforts for development. Thus education upon reflection is forced to hold that the reality it declares mental it must also declare actual.

The Absolute Mind is Self-active.

(*c*) Man is the only educable being. The horse, the dog, — the lower animals, are trained, not educated. Apparently the lower creature frames to himself no goal to be reached, no moral or intellectual end to be attained, no development to be secured. There is direction, but not self-direction; consciousness, but not self-consciousness; inherited instinct, but not conceptual reasoning. Such intelligences are trained, through processes of associative memory, but not educated, through the pursuit of rational ends self-consciously conceived. The dividing line between training and education is uncertain but real. In the field of animal intelligence least of all is the modern psychologist permitted to dogmatize. He only finds man with a history, literature, science, and the arts of civilization which the lower animal lacks. He knows man's works are due to his powers of symbolic thinking. He must suspect then that this is the distinguishing characteristic of man, differentiating him from the lower animals. All his observations go to confirm, and nothing to contradict, this position.

To quote Professor James: "One total object suggests another total object, and the lower mammals find themselves acting with propriety, they know not why. The great, the fundamental, defect of their minds seems to be the inability of their

groups of ideas to break across in unaccustomed places. They are enslaved to routine, to cut-and-dried thinking; and if the most prosaic of human beings could be transported into his dog's soul, he would be appalled at the utter absence of fancy which there reigns. Thoughts would not be found to call up their similars, but only their habitual successors. Sunsets would not suggest heroes' deaths, but supper-time. This is why man is the only metaphysical animal."[1] If these things be true, and they have not been gainsaid, it is only a humorous exaggeration to speak of educated animals. The lower creation seems to lack that power of self-directed pursuit of consciously conceived ends which makes education possible. This power we have already named, in brief, self-activity. Man is the only educable being because only he has a sufficient measure of self-activity to attain by effort rational ends.

"The nature of education is determined by the nature of mind — that it can develop what is in itself only by its own activity. . . . Education is the influencing of man by man, and it has for its end to lead him to actualize himself through his own efforts. . . . Man, therefore, is the only fit subject for education. We often speak, it is true, of the education of plants and animals; but, even when we do, we apply other expressions, as 'raising,' 'breaking,' 'breeding,' and 'training,' in order to distinguish it from the education of man. 'Training' consists in producing in an animal, either by pain or pleasure of the senses, an activity of which, it is true, he is capable, but

[1] James, "Briefer Psychology," p. 369.

which he never would have developed if left to himself." [1]

The education that has grown reflective as to its foundations asks concerning the source of this self-activity which man displays and which makes of him the only fit subject of educational endeavor. A sufficient cause of man's self-activity is in question. The cause of any phenomenon in the last analysis reduces itself to the statement of the relation in which that phenomenon stands to the whole of which it is a part. Nothing short of the whole absolute reality is the complete cause of the fall of a sparrow or the loss of a hair. The sole, invariable, and necessary antecedent of a phenomenon cannot be found this side the whole truth, the sum total of things that are. The reality of which man is a part, is a unity; to assert any division in reality is to imply the whole so divided; to assert any multiplicity of real principles is to imply a corresponding multiplicity of inter-relationships between them, like good and bad, light and darkness, idea and matter, etc., which thus reduce themselves to one system. Is the whole of which self-active man is a part itself self-active? It is to be noted that man is not absolutely self-active, but he is limited just in so far as he is a part and not the whole. His limits he becomes aware of in the forces of heredity and the influences of environment. But the whole of which man is a part is not limited, being itself inclusive of all that is. Within this whole a measure of self-activity is discovered in man. Here is a self-activity of a certain degree then going on within the

[1] Rosenkranz, "Philosophy of Education," Tr. Brackett, pp. 19–20.

whole, which the whole itself, being the whole, could not have received from beyond. There is limited self-activity within the whole in man, the whole is thus self-active, and so absolutely self-active. If there is a movement within the whole, then the whole is responsible for the movement, and so the whole possesses the quality of self-movement. The sufficient source of that self-activity which education finds in man is reached thus only in an absolutely self-active whole. The ultimate reality, which education implies to be mental and actual, it also implies to be self-active.

If it be true, as education would seem to warrant us in supposing, that reality is one actualized self-active mind, then it would likewise appear that man, as the only educable being, a potential mind capable of actualization through its limited self-activity, is the highest manifestation in the temporal process of the true reality. The self-activity of man, conditioning his education, is the clearest expression in the limits of time of the immanent and transcendent self-activity of reality. It is as though in man realizing his destiny through self-activity, the Absolute beheld himself reflected. The Absolute is; the finite becomes.

The Origin of Man is God.

Putting together these matters we may say, education implies, in the first place, as the origin of man, a reality which is mental, realized, and self-active. In religious language this absolute reality is called God.

The Conception of God.

The conception of God as herein reached is that of one absolute mind, complete and self-moving. Being absolute, there are no other gods; being mind, He is not

less than personal, however far He transcends the human conception of personality; being complete in Himself, there is no change of time, neither increase nor decrease; time exists in Him as a part, but He does not exist in time and grow old with the centuries; being self-active, He is not the transmitter of an alien limiting force but is the infinite free being, the adequate explanation of all force, energy, and movement that appear in time. From the point of view of the speculative physicist, matter disappears into some form of energy, like electricity; from the point of view of the speculative philosopher, energy disappears into some form of consciousness, like attention.

The only energy whose nature man really knows through immediate experience is that which his own consciousness exerts when he voluntarily or involuntarily attends. Here is energy at first hand; other energy, like electricity, appears at second hand in what it does, not at first hand in what it is. The energy of the world thus in the last analysis may be held to be the attentive aspect of the consciousness of God.

Idealistic Theism.

This conception of God is not that of the transcendent Jehovah of the ancient Hebrews, for God is in His world; neither is it that of the immanent *Deus sive Natura* of the great Jewish philosopher, Spinoza, for the world and we are in God, living and moving and having our being. Our conception is neither a transcendent dualism, nor an immanent pantheism, but an idealistic theism. God is the self-conscious unity of all reality. Within His life falls the life of nature and of man. We are the content of His consciousness,

and not we only, but all that which is, whether the heavens above, or the earth beneath, or the waters under the earth, — all that we know is a part of the infinite fulness of the content of His consciousness.

The error of pantheism consists in saying, All is God, instead of saying, All is God's. The ultimate reality is not to be spoken about as It; but to be spoken to as Thou. The error of transcendent dualism consists in supposing the world is without, instead of considering it as within, the life of God. He is not far away from any one of us; it is not even enough to say, He is with us and within us, and within the world; but we must go the whole way with St. Paul and say, we live and move and have our being in Him. The true doctrine of immanence is not that God is in nature and man, but that man and nature are in God. The truth is not an immanent God, but an immanent world; the world dwells in God, not God in the world. God is the including consciousness; the world is a part of the included content. God is the infinite Person in the unity of whose consciousness all things exist; the widening stream of time with its natural and human developments is a significant process in His consciousness, in which He is interested from before the foundation of the world as the fulfilment of one of His own meanings, and which is interested in Him as rapidly as it becomes conscious of its own explanation. Matter is the objective thought of the infinite consciousness, no less real, substantial, and solid on that account than it shows itself in man's experience, but nevertheless ultimately a process of thought in the consciousness of God. This is the doctrine of ide-

alistic theism to which education brings us as the only adequate interpretation of its own implications concerning the origin of man.

The Environment of Man is God.

A great new light is thus thrown upon the final nature of the environment of man, hitherto described as intellectual, emotional, and volitional, in adjustment to which consists the education of man. The environment of man is God. Science, reached by the intellect of man, is the thought of God in the world; Art, reached by the emotions of man, is the feeling of God in the world; and Volition, as expressed through the will of man, is the plan of God in the world. We work out our own science, art, and volition, the health of civilization, our salvation, with fear and trembling, for it is God that worketh in us both to will and to do of His good pleasure. Because the world is the product of the Logos, the thought, of God, it is intelligible to man; because it is the product of the feeling of God, it is beautiful to man; because it is the product of the will of God, it is good to man. The Word became the world and dwelt about us, before it became the flesh and dwelt among us. Without the Word was not anything made that was made. There is a material as there is a human manifestation of the mind of God in time.

Those impersonal ideals of education descriptive of man's environment, viz., truth, beauty, and goodness, become personalized in the one inclusive consciousness of God. The world is His, and the fulness thereof. The true, the beautiful, and the good are the ideals of man because they are the ideas of God. He thinks the truth, enjoys the perfect, and

wills the good. Thus much is sure, as the temporal process reveals, and infinitely more, too, unexpressed in time and so not entered into the mind of man to conceive. This last it is necessary to say emphatically in order to avoid the errors, while enjoying the fruits, of necessary anthropomorphism. No doubt the infinite God has other ways of revealing Himself to man than through the temporal order, but this is the present plan. To us now He speaks only through an environment, world-old, containing its essential elements of knowing, feeling, and willing. This total temporal environment is one part of the content of His consciousness; it is as a unit His temporal manifestation, His Son, which came to consciousness of itself as one with Him in the unique Person of all time, His greatest Son, Jesus of Nazareth, the Christ.

The Trinity.

God is the self-conscious unity of all reality; nothing falls beyond His providential care. In this complete unity of self-consciousness, one can make abstractions of thought that do not exist in reality. There is the infinite Subject, the thinker, the I, the Father, who does not exist apart from the infinite Object, the thought, the Me, the Son, a portion of which is the temporal order, rising into clear consciousness of itself in Jesus, and there is the concrete unity of both aspects in one Being, the Spirit. God is Spirit. And the whole is one Person, as any self-conscious individual, himself a subject-object, is one. This is the true Trinity indeed, showing forth the social nature of God. This counting of the phases of the Absolute Self-consciousness, to which we are

brought through the recognition of the environment of man as a manifestation of the ideas of God, is as important as it is interesting because of its historic and controversial bearings.

Summary. The sum of our discussion of the origin of man as suggested by the implications of his education is, that the adequate explanation of man as an educable being is an actualized, self-active, Mind, namely, God, made manifest to man through his temporal environment.

The Nature of Man. Second, as to the nature of man. Following our now familiar and characteristic method of philosophy, we have to point out three factual considerations upon which rest the implications of education concerning the nature of man. These considerations are not novel to us after ploughing through the preceding pages, only we have not as yet seen their deeper meaning. Philosophy is always thus adding the meaning of things to their seeming.

The Response of the Pupil. (*a*) Education is the product of the mind's effort. The development of mind is from within out, not from without in. No teacher and no curriculum can educate the youth who will not respond. The teacher may lead the pupil to the founts of learning, but he cannot make him drink. The teacher's art, as some one has said, consists in making the pupil so thirsty that he will want to drink. Teaching is not so much the cause of learning, which is so frequently asserted, as it is the occasion or condition of learning. The cause of learning is the pupil himself and his effort. The teacher, the curriculum, the apparatus, the school buildings, — these all are but the stimulating environment of the pupil. The teacher is like

the gardener who digs about and nourishes the plant which grows of its own impulse. The pupil is like the plant so stimulated in so far as his response is his own, but he is unlike the plant in that his response may be withheld. There is a possible wilful obstinacy in pupils that does not appear in plants. If they do not become educated in the day of their visitation from the teacher, it is because they would not. The ultimate responsibility for winning an education rests with the will of the pupil. We try to teach, train, instruct, and discipline him, but we cannot educate him; he must educate himself. Every educated man is self-educated; the only difference is that in some cases the stimulating and nourishing environment was lacking, unfortunately so for both the man and his self-education, while in the other cases the man had good assistance. The pupil's ultimate power to make himself work must be acknowledged by teachers. Their function is not to make pupils learn but to make learning so attractive and compelling in interest that pupils will want to learn; not theirs to hector over and be-lecture pupils, but to provide a happy occupation for their free individualities. Not in me, not in me, sayeth the teacher, but the kingdom of education is within you. Education, all this means to say, is the result of the effort of the self-active mind to assimilate the incoming stimuli from the school; is free individuality expressing itself.

Results proportionate to Effort.

(*b*) Education presents us with results proportionate to effort expended. The degree of effort put forth by the pupil in response to his educative environment, determines his educational attainment.

The same school stimuli receive different responses from different individuals; the educational process is not so much the stimulus shaping the individual, as the individual responding to the stimulus. The same school sends forth pupils with a diversity of attainments, because the same stimuli have received individual responses. Just as the natural world, though one, has produced a variety of organisms through their individual reactions upon its stimuli, so the unitary environment of the school produces a variety of achievements through the individual responses of the pupils. The greater the effort expended, within the natural limits of health, the greater the amount of knowledge and the degree of development secured. One pupil puts forth more effort than another, he thereby secures a greater return. This is indisputable. It may even appear that the same pupil in successive periods of time gains in proportion as he expends. Strenuous one term, slack the next, his developed efficiency is correspondingly more and less. It is as though the degree of effort of the individual were variable in amount. Not simply the prior question of whether he will work or not, but also the present question of how much he will work, seems subject to the free decision of his own personality. Will I give attention at all? How much attention will I give? These two ultimate questions are answerable only by the individual pupil himself, and upon their momentous answers hang the weight of his present and future education. Every pupil is the keeper of his own educational results.

Partial Self-realization attained.

(*c*) Through the energy of effortful attention man becomes in his education what he is intended to be; he realizes his nature; develops his natural potentialities; attains his mental majority; declares his intellectual independence; is emancipated from the slavery of ignorance, superstition, fear, and evil; becomes a free being. That which is cramped, dwarfed, and hidden within the chambered recesses of his own personal nature is manifested in full fruition in the light. The word of educational development, "I become," is partially exchanged for the word of real existence, "I am."

The Nature of Man is Freedom.

Putting these matters together concerning the nature of man, we may say that education means that through his own effort, helped by an invigorating environment, man becomes what he is intended to be; but to become through one's own effort, through response to stimuli, what one is intended to be is to be free. The nature of man is freedom.

The Nature of Freedom.

Education does not imply a freedom of acting with an unmotived will, the so-called liberty of indifference, for the stimulating educational environment is present, presenting motives to consciousness to which to respond; neither does it imply a freedom of will to respond to the strongest motive, which is determinism, for education observes the inequality of response of different pupils to the same stimuli, and of the same pupil at different times. These observations do not prove, but they are indicative of, the presence of an independent variable in the conscious response of the pupil to educational motives. But in contrast to the liberty of indifference and

determinism, education implies the freedom of consciousness to realize in some measure, through effort of attention, its own selected ends. Such freedom alone is the adequate possibility of education, for only such a free being has a rational end to be self-actively attained; only such freedom permits the self-realization of one's rational destiny. This is not an absolute freedom to do anything at any time; it is a limited freedom to do something at some time. It permits man to utilize his world to attain his own rational ends; it prevents his being the puppet of circumstances, the creature of environment, and the slave of the strongest impulse. It is a freedom, not of the will as a part of consciousness, but of consciousness itself to direct its own thoughts, to attend to selected ideas, thereby inhibiting others, and so to enact its own purposes in conduct. The will is free because the consciousness is free. My ability to direct my thoughts is my ability to act as I will. As a man thinketh in his mind, so is he in his life.

The Freedom of Mind.

Since the mind is a unity, though its operations are many, the question concerning the freedom of the will is really a question concerning the freedom of mind. The failure to recognize this fact has confused much of the controversy on this old question. Since the days of Augustine, even until now, the old notion of the mind as divided into so many separate and distinct faculties has most conveniently served the purposes of polemics. On this old basis the free-will question is threshed out, as Leslie Stephen has somewhere observed. But once it is recognized that the mind is a unity with a diversity of functions, then

the question of freedom is reopened in a new way. On this basis it is no longer possible to say that the will is not free if it follows the strongest motive; for the strongest motive itself is a product of the energetic, or attentive, aspect of consciousness. Through attending to an idea the mind makes its motive, and through attending to one idea to the exclusion of others, it makes the strongest motive. The strength of motives is not a given datum, like color or noise; it is the repelling or appealing quality of an idea generated under the lens of attention. A casual glance of the mind over its present ideas reveals a series of strengths quite different from a studied scrutiny with a view to selection among them. To dwell upon a forbidden line of conduct may enhance its appealing power; to wait and listen for the still small voice of right may magnify its volume till it seems to drown all other sounds. Thus it may not infrequently happen that a motive weakest at the start is strongest at the finish. To follow such a mind-made motive is not to be determined, but to be self-determined, that is, to be free. If the mind in its selection of ends of action makes us free, then are we free indeed. The act of choice between conflicting motives, so frequently identified with the question of freedom, and so frequently, too, an apparently fated affair in view of the final strength of the motive to which we yield, is itself but the culmination of the free mental process of attention.

Often indeed in unimportant matters there is the conscious sense of dual possibility at the very moment of choice, which is by no means illusory, but signifies the

mind's ability to shift its attention, and so its choice. But in important matters, when the mind is finally fixed upon one course of action to the exclusion of others, there is also the conscious sense that this is the only thing to be done under the circumstances, in which case the apparently determined decision is itself due to the preceding free and voluntary process of attending to all the possibilities, under the general purpose of following the best. No fact of introspection is more certain than my ability to direct my thoughts. But, through the recognized principle of ideo-motor action, to direct my thoughts is to direct my acts. Once a present idea is exclusively attended to, the nervous system takes care of its execution. It is not in man that walketh to direct his steps, for his nervous system may refuse its service, but it is in man that thinketh to direct his thoughts, and with an unimpaired nervous system, the deeds follow accordingly.

On the pivot of attention the question of freedom turns, as Professor James has shown. He writes, "*The question of fact in the free-will controversy is thus extremely simple.* It relates solely to the amount of effort or consent which we can at any time put forth. Are the duration and intensity of this effort fixed functions of the object, or are they not? Now, as I just said, it *seems* as if the effort were an independent variable, as if we might exert more or less of it in any given case."[1] To this introspective evidence, based on the unity of mental procedure, is added the weight of the implications of education. Without the freedom to realize one's

[1] James, "Principles of Psychology," Vol. II, p. 571.

chosen end through effort, man, like the lower animals, is a creature of heredity and environment, the fit subject of training with physical penalties and pleasures, but not of education as the self-realization of one's rational destiny.

Being a wholly temporal process, education implies a real present freedom and is silent concerning a transcendental freedom.

The Destiny of Man.

Third, the destiny of man. There are two notable things about education that bear on this far-reaching question, and that go together. (*a*) Man's education as an empirical process is never completed; (*b*) the possibility of man's development seems infinite.

The Finiteness of Man's Grasp.

No man is ever all he can be. At any point in his development he has a growing future. His purposes are not ended with his life, nor does he live in a spent world. Neither does the race in its development discover any waning intellectual possibilities; rather a growth in attainment, if not in capacity. Age does not wither, nor custom stale, the philosopher's love of truth, the artist's love of beauty, or the saint's love of virtue. These ideals of the human reason flee us as we pursue them in time. There is always more to know, and to love, and to do. With these fundamental demands on the universe from the great deeps of man's nature, the incident in life called death seems apparently to have nothing to do. Man does not limit his will to know, to enjoy, and to achieve, to his life's unknown term of years. His plans bridge the chasm of death; they call for an unending time in which their execution may be effected.

Truth is as infinite as the thought of God, but it is waiting to be revealed to man's growing intellect. Beauty is as limitless as God's passion for the perfect, but it is waiting to be appreciated by man's developing emotions. Goodness is as eternal as the will of God, but it is waiting to be realized through the finite will of man. These infinite ideals are the unattainable objects of man's legitimate endeavor; they represent the goal of his development; they are the prophets of his present nature and future progress. Man's development is an infinite process; he is embarked on an unending voyage; he has matriculated in the University of the Universe, whence there is no graduation. The essence of eternity never gets itself fully expressed in the temporal order; time never completely includes the eternal meaning. Eternity possesses what time increasingly suggests. The true self of man he presses on to attain; his present incomplete growing self is but the intimation of what he really is. As the most philosophic of the poets of the last century has said:—

The Infiniteness of Man's Reach.

"Man partly is, and wholly hopes to be."

Given this unlimited demand by man upon his world, what of it? Man has a nature to realize to which any amount of time assignable is inadequate. What follows? Either the universe is irrational, with a good work begun which could not be continued, or man has the power of an endless life. But the temporal order as so far forth developed discovers reason at its core. The world is intelligible, appreciable, and conformable, to the mind of man. The development

The Rationality of the World-order.

of science, of art, and of history, presupposes a rational, passionate, and purposeful world-order. A caprice in nature indicative of an inherent irrationality has never appeared to the wondering and scrutinizing intelligence of man. If there be an unintelligible, unlovely, and wilful element in the eternal constitution of things, not once in historic time has it unmistakably declared itself. The error, the ugly, the evil, of the temporal order do not certainly declare the irrationality of the eternal; they may signify only the inadequacy of the temporal to express the whole meaning of the eternal. In the very inability of the infinite to get into the finite, as shown perhaps by these failures of the real to reach the ideal, may ultimately appear the very seal itself of the rationality of the eternal and temporal order. For, these very failures should we reasonably expect, in case the infinite and realized truth were the limit of temporal development.

As Professor Royce[1] has pointed out that the very possibility of error implies the actual existence of an inclusive experience which recognizes and corrects the error, so the argument may be extended to show that the very possibility of the ugly or the sinful implies an absolute experience within which they fall, are comprehended, and overcome. This present object is ugly because the critic's experience is large enough to include it and also a standard to which it should conform. This present act is sinful because my insight is large enough to tell me I ought not to do it in the very moment of its committal. Without such insight there had been no

[1] "The Religious Aspect of Philosophy," pp. 384 ff.

sin. To generalize, the ugly and sinful temporal order are such, if so at all, only because an eternal order includes them and judges them so to be. If the very appearances of irrationality in the world turn thus under inspection into evidence of its larger rationality, then do we return to the thought of what education demands of a rational world-order.

The Destiny of Man is Immortality.

Education apparently reveals in man a capacity for infinite growth. Will the education of man, which is never completed at any chosen moment in time, and for the eternal continuance of which man seems fit, go on unendingly? It would be an irrational universe, one in which the part did not manifest the whole, if a process with so much human significance in it as education has, and crying out so for an unending time, were to be cut short without conclusion, like a refreshing river in desert sands. If all the evidences are trustworthy and our world is rational; if the finite really manifests, though darkly, the infinite; if the fragmentary suggests, though imperfectly, the complete; if the part reveals, though in a riddle, the meaning of the whole; if, finally, all temporal values get their ultimate recognition; then there is for man an opportunity, guaranteed by his universe, and unabridged by the transitional incident in life named death, to finish his education, to achieve his destiny, and to grow unceasingly into the likeness of the Infinite Being. This is the hope of immortality.

Being a temporal process, and implying an infinite continuance wherein self-conscious personalities approach their goal, education is silent concerning a

Spinozistic immortality of having aimed at the eternal while living.

And since all minds with good brains respond more or less to educational endeavor, education has nothing to say concerning a conditional immortality.

And, like morality, education discovers after its best appeals certain characters that prefer the darkness of evil to the way of light. It also recognizes the dependence of real happiness or misery upon the quality of the character, whether good or bad. Wherefore it cannot but assert the possibility of permanently choosing the evil as against the good, whereby men place themselves in the position of the dragon under St. Michael's foot, while the victory is eternally to the good.

Summary of the Philosophy of Education.

Reviewing now the philosophical implications of education as a world-process in time, it would appear that education means that the origin of man is God, the nature of man is freedom, and the destiny of man is immortality. Thus does philosophy, from the implications of education as well as from the Kantian intellectual agnosticism and moral ladder, though baking no bread, as Novalis observed, still procure for us, not by proofs but by plausible implications, — God, Freedom, and Immortality.

It now remains for us only to incorporate these philosophical elements with our preceding empirical conception of education, in order that finally may appear in as complete a fashion as we can frame it our definition of the real and true nature of education. Philosophy has taught us to think that the adjustment to environment upon which biology in-

sisted as the essence of education is really an endless process. The flow of time brings man momentarily and unendingly into a new and changing environment requiring a continual adjustment thereto. Concerning that physical body upon whose proper treatment physiology could not too strongly insist, philosophy reminds us that it is the temporary vesture of the mind to be utilized while it lasts and then laid aside. As for that development of mind which psychology stressed as the natural fruitage of the educational process, philosophy reminds us that the mind of man is fashioned for a growth that is unceasing. Concerning that environment to which education adjusts man, and which sociology defined for us as the achievement of humanity in the world as it attempted to know, to appreciate, and to do, philosophy has said that it is God, manifesting Himself in the temporal order, through man's ideals of Truth, Beauty, and Goodness. And of the conscious human being who all along has been our worthy object of educational endeavor, philosophy teaches us to think as free, capable of fashioning to some extent his own future according to his own plan.

Fifth Definition of Education.

Putting all these matters together and summarizing our preceding total inquiry concerning the nature of education, we reach the following last conception: *Education is the eternal process of superior adjustment of the physically and mentally developed, free, conscious, human being to God, as manifested in the intellectual, emotional, and volitional environment of man.*

In the rich, brief words of Fichte, education is "eternal perfecting." It is the ever continuing process whereby the individual becomes the universal. The category of ultimate reality is being; of temporal reality, and so of education, is becoming. Through education the individual becomes in time what he eternally is. Never-ending life is God's education of man into His own likeness. In the beautiful figure of Addison, man in his development toward the Infinite is like the asymptote approaching its limit, ever nearer, but never there. Or, in the language of Dr. Everett, who says from the point of view of thought what we have tried to say from the point of view of education: "*The individual is the universal.* This is the type of every logical proposition. . . . Our fundamental and typical proposition is false. The individual is not the universal. The universal stretches far beyond the individual. A single man does not exhaust the possibilities of humanity. . . . The individual is not the universal, but it *will* be. Logic is sometimes taunted with being a progress into the infinite. This is its highest pride. Thought rushes from step to step, from form to form, striving to subdue this great discord. It seeks ever to find the universal in the individual, to lift the individual to the universal. So soon as any point is reached, after all its pains and labor, it finds the gulf as wide as ever.

This is not true of thought only, but, because thought is one with nature and history, it is true of these also. This, which is the moving power of thought, is the moving power of the universe.

Everywhere there is the same breach, the same struggle. Everywhere the universal strives to shape itself in the individual, and everywhere, failing its aim, it breaks to pieces its own work, and presses onward to new forms." [1]

Even so does the Infinite come, and quickly, into all the lives of the sons of time!

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